SECTION AV
AUDIO-VISUAL SYSTEM

CONTENTS

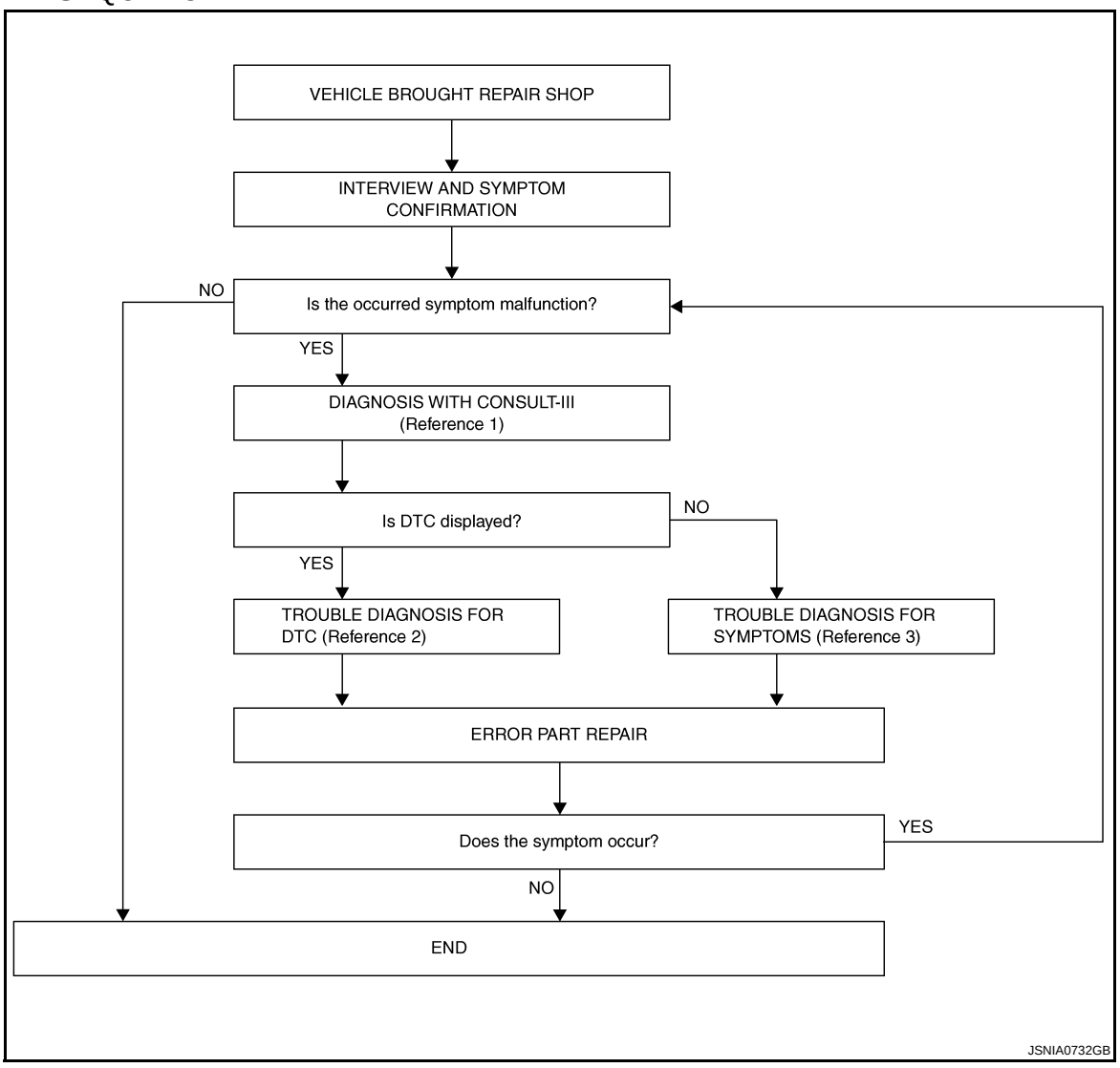
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000004155599

OVERALL SEQUENCE



Without Navigation
- Reference 1··· Refer to AV-55, "WITHOUT NAVIGATION : CONSULT-III Function (MULTI AV)".
- Reference 2··· Refer to AV-176, "WITHOUT NAVIGATION : DTC Index".
- Reference 3··· Refer to AV-461, "WITHOUT NAVIGATION : Symptom Table".

With Navigation
- Reference 1··· Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".
- Reference 2··· Refer to AV-220, "WITH NAVIGATION : DTC Index".
- Reference 3··· Refer to AV-464, "WITH NAVIGATION : Symptom Table".

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.
NO >> INSPECTION END

2. DIAGNOSIS WITH CONSULT-III

1. Connect CONSULT-III and perform a self-diagnosis for “MULTI AV”.
   Refer to AV-55, "WITHOUT NAVIGATION : CONSULT-III Function (MULTI AV)". (without navigation)
   Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)". (with navigation)
   NOTE:
   Skip to step 4 of the diagnosis procedure if “MULTI AV” is not displayed.
2. Check if any DTC is displayed in the self-diagnosis results.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index.
   Refer to AV-176, "WITHOUT NAVIGATION : DTC Index". (without navigation)
   Refer to AV-220, "WITH NAVIGATION : DTC Index". (with navigation)

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom.
Refer to AV-461, "WITHOUT NAVIGATION : Symptom Table". (without navigation)
Refer to AV-464, "WITH NAVIGATION : Symptom Table". (with navigation)

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “MULTI AV” with CONSULT-III.
   NOTE:
   Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Description

INFOID:0000000004155600

Always correct the center position of the rear view monitor's possible route line after disconnecting the battery negative terminal.

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement

INFOID:0000000004155601

1.CORRECTION OF CENTER POSITION OF REAR VIEW MONITOR'S POSSIBLE ROUTE LINE

Refer to the following for details.

>> Refer to AV-14, "REAR VIEW MONITOR POSSIBLE ROUTE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement".

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000004155602

When camera control unit is replaced, the center position of rear view monitor possible route line is corrected.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000004155603

1.CORRECTION OF CENTER POSITION OF REAR VIEW MONITOR'S POSSIBLE ROUTE LINE

Refer to the following for details.

>> Refer to AV-14, "REAR VIEW MONITOR POSSIBLE ROUTE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement".

REAR VIEW MONITOR POSSIBLE ROUTE LINE CENTER POSITION ADJUSTMENT

REAR VIEW MONITOR POSSIBLE ROUTE LINE CENTER POSITION ADJUSTMENT : Description

INFOID:0000000004155604

Adjust the center position of the possible route line of the rear view monitor if it is shifted.

REAR VIEW MONITOR POSSIBLE ROUTE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement

INFOID:0000000004155605

1.STEERING OPERATION

Steer the steering wheel to the leftmost and rightmost ends.

>> GO TO 2

2.DRIVING

Drive the vehicle straight ahead 100 m (328.1 ft) or more at a speed of 30 km/h (18.6 MPH) or more.

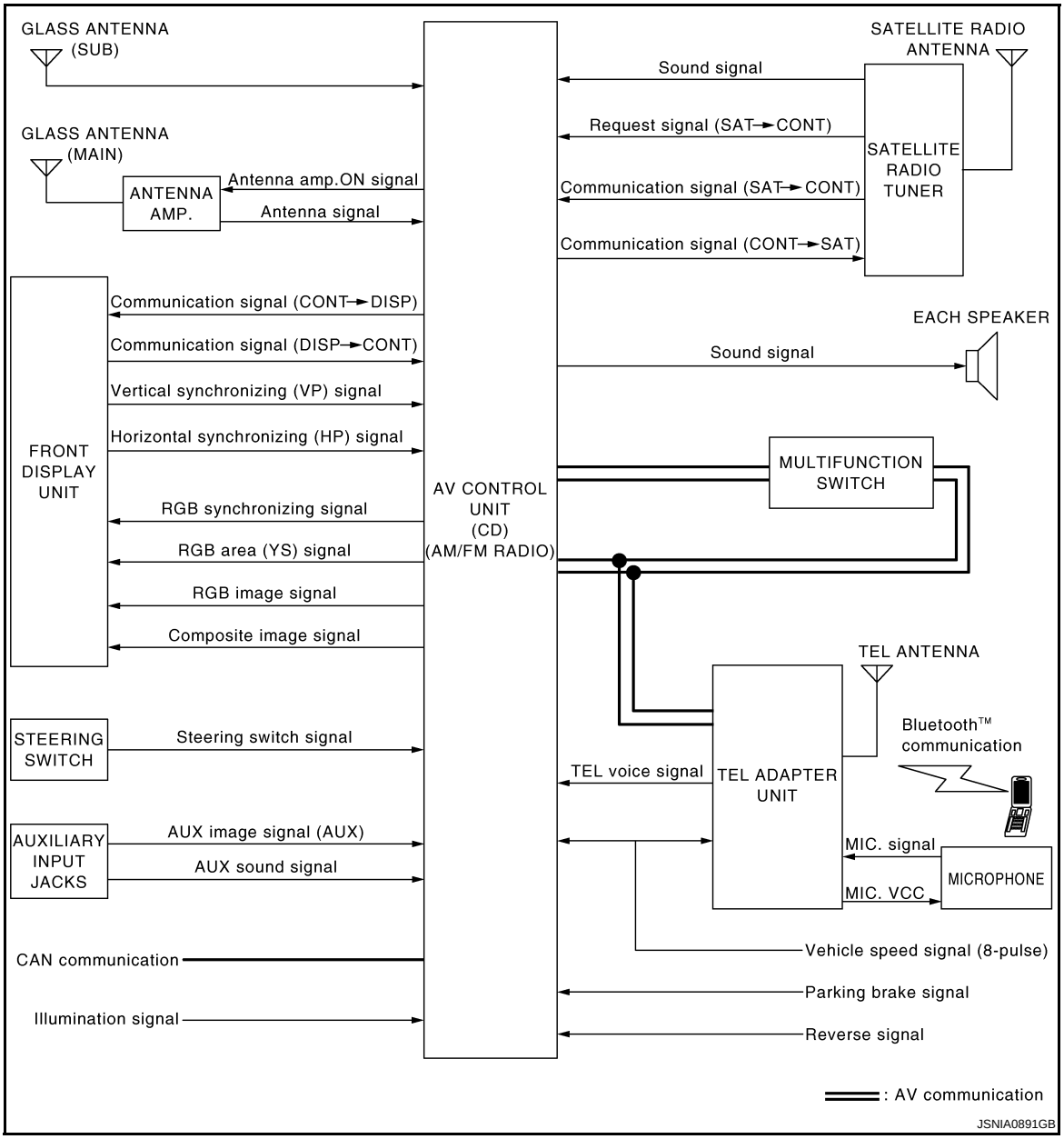
>> END

FUNCTION DIAGNOSIS

MULTI AV SYSTEM
WITHOUT NAVIGATION

WITHOUT NAVIGATION : System Diagram

INFOID:0000000004155606



NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

WITHOUT NAVIGATION : System Description

INFOID:0000000004155607

Multi AV system means that the following systems are integrated.

System name	System explanation
AUDIO SYSTEM	AV-35, "WITHOUT NAVIGATION : System Diagram"
HANDS-FREE PHONE SYSTEM	AV-43, "WITHOUT NAVIGATION : System Diagram"

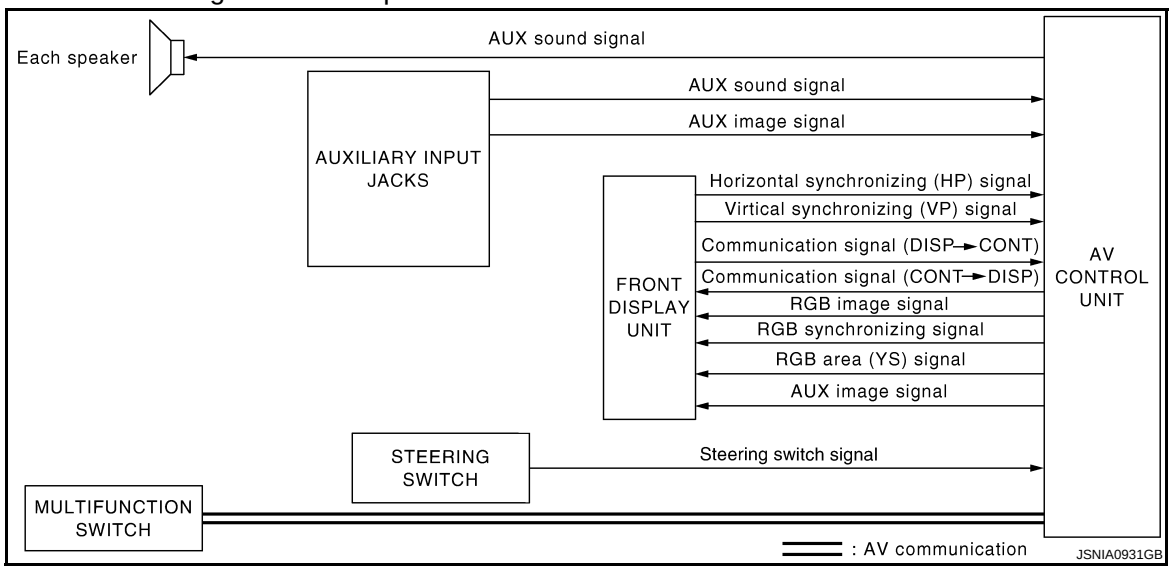
System name	System explanation
VEHICLE INFORMATION SYSTEM	• Status of audio, climate control system, fuel economy, maintenance and navigation is displayed. • AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM, unified meter and A/C amp. and BCM.
AUXILIARY INPUT SYSTEM	Refer to the following “AUXILIARY INPUT SYSTEM”.

- AV control unit function by transmitting/receiving data one by one with each unit (slave unit) that configures them completely as a master unit by connecting between units that configure MULTI AV system with two AV communication lines (H, L).
- Two AV communication lines (H, L) adopt a twisted pair line that is resistant to noise.
- AV control unit is connected by CAN communication, and it receives data signal from ECM, unified meter and A/C amp. It computes and displays fuel economy information value with the obtained information. Transmitting/receiving of data signal is performed by BCM. Also, it transmits the required signal of vehicle setting and receives the response signal.
- AV control unit is connected with front display unit via serial communication, and it transmits the required signal of display and display control and receives the response signal from display. Also, it is connected with satellite radio by serial communication, and it transmits the operating signal and receives the display signal.

NOTE:
AV control unit can perform CONSULT-III self-operating function and on board self-diagnosis.
- CONSULT-III self diagnosis: Refer to AV-55, "WITHOUT NAVIGATION : CONSULT-III Function (MULTI AV)".
- On board self diagnosis: Refer to AV-48, "WITHOUT NAVIGATION : Diagnosis Description".

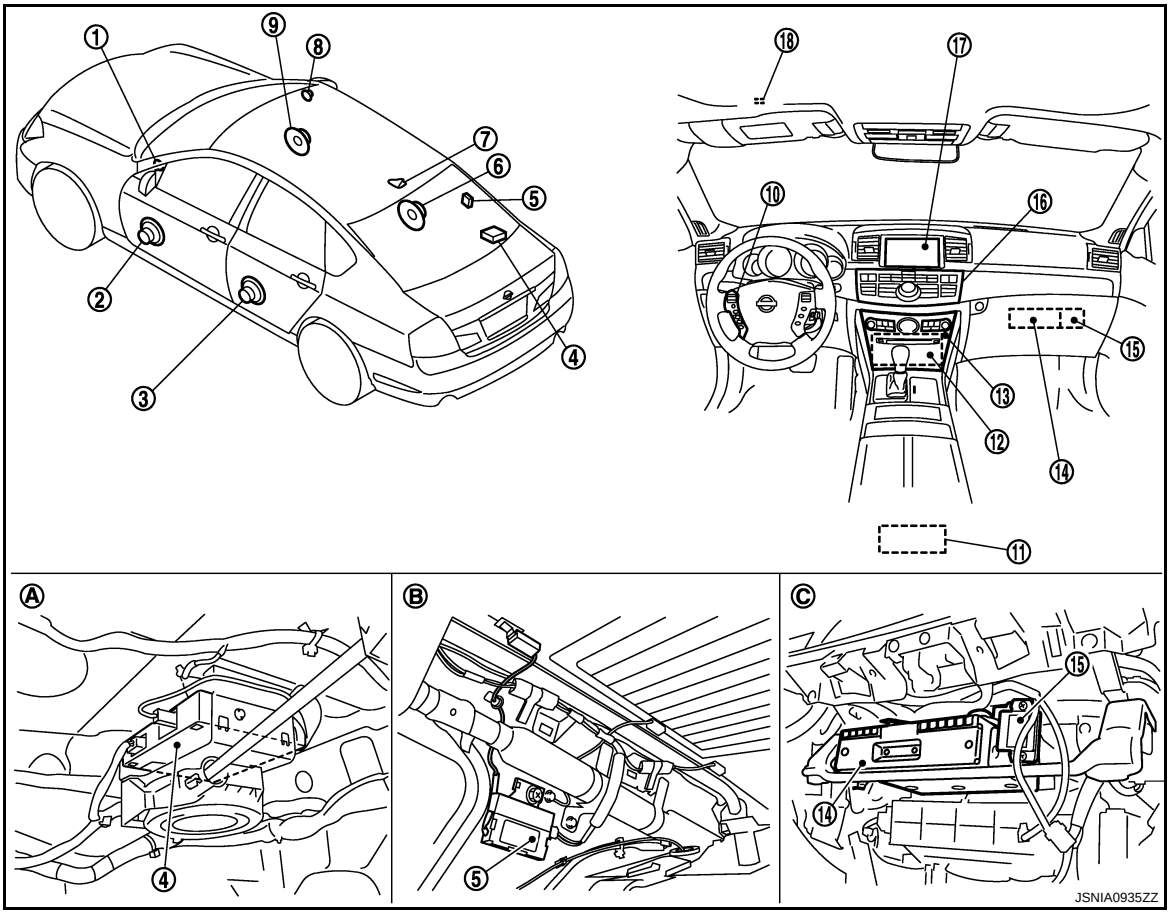
AUXILIARY INPUT SYSTEM

- Image and sound can be output from an external device by connecting a device with auxiliary input jacks.
- Operation can be performed with multifunction switch and steering switch. Multifunction switch transmits operation signal to AV control unit by AV communication.
- The AUX image signal is input from the auxiliary input jacks to the AV control unit. The AV control unit outputs AUX image signal to the front display unit.
- The AUX sound signal is input from the auxiliary input jacks to the AV control unit. The AV control unit outputs the AUX sound signal to each speaker.



WITHOUT NAVIGATION : Component Parts Location

INFOID:0000000004155608



1.	Tweeter LH	2.	Front door speaker LH	3.	Rear door speaker
4.	Satellite radio tuner	5.	Antenna amp.	6.	Rear door speaker RH
7.	Satellite radio antenna	8.	Tweeter RH	9.	Front door speaker RH
10.	Steering switch	11.	Auxiliary input jacks	12.	AV control unit
13.	Preset switch	14.	TEL adapter unit	15.	TEL antenna
16.	Multifunction switch	17.	Front display unit	18.	Microphone
A.	Under rear parcel RH side	B.	Rear pillar finisher (RH) is removed	C.	Glove box cover is removed

WITHOUT NAVIGATION : Component Description

INFOID:0000000004155609

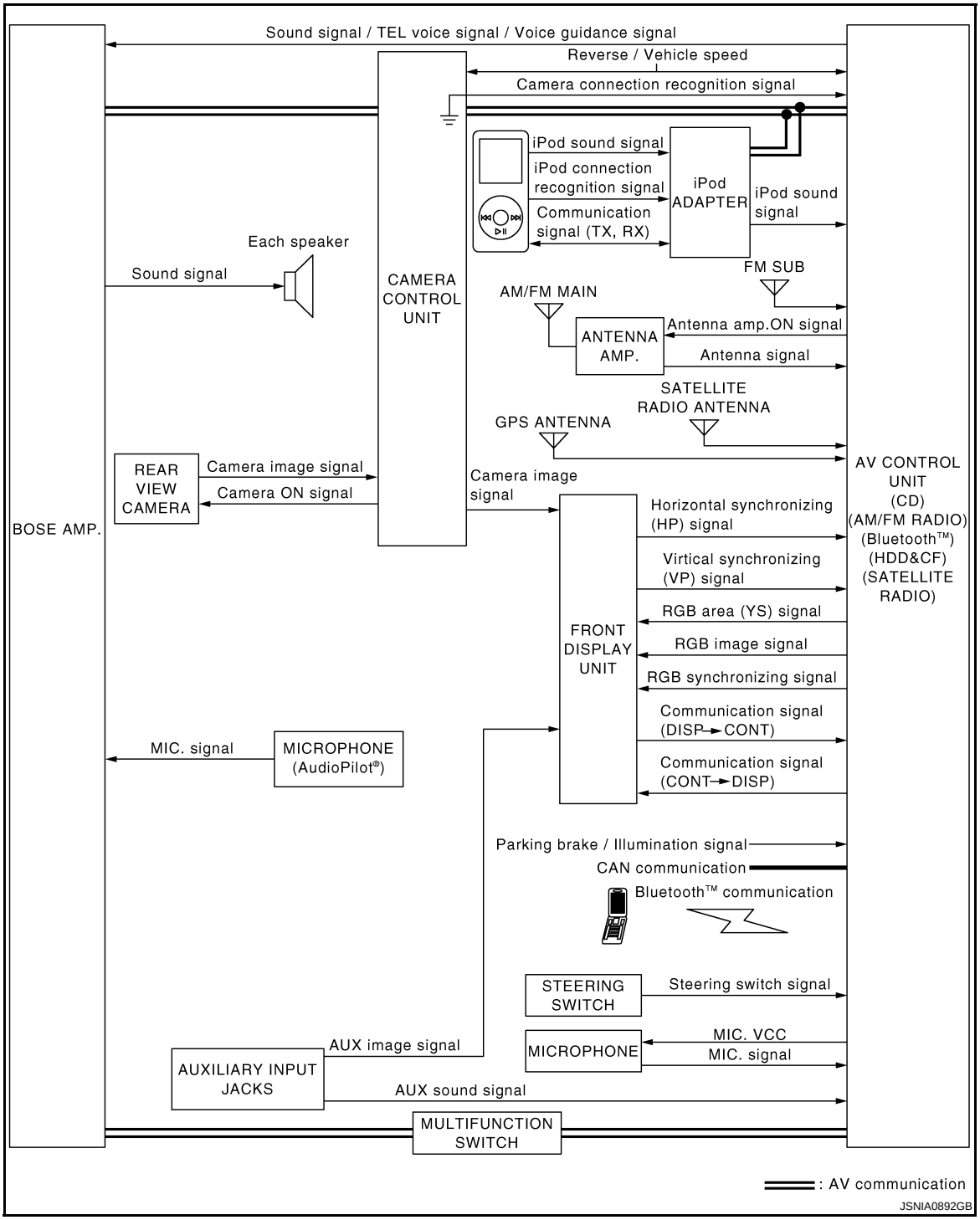
Part name	Description
AV CONTROL UNIT	• It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Auxiliary image and sound signal are input from the auxiliary input jacks.
FRONT DISPLAY UNIT	• Front display image is controlled by the serial communication from AV control unit. • RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing). • Synchronize signal (HP, VP) is output to AV control unit. • Auxiliary image signal is input from AV control unit.
FRONT DOOR SPEAKER	• Outputs sound signal from AV control unit. • Outputs high, mid and low range sounds.
REAR DOOR SPEAKER	• Outputs sound signal from AV control unit. • Outputs high, mid and low range sounds.
TWEETER	• Outputs sound signal from AV control unit. • Outputs high range sound.
MULTIFUNCTION SWITCH	• Operation panel is equipped with the centralized switch where audio, auxiliary input, vehicle information and vehicle settings operations are integrated. • The multifunction switch is connected via AV communication, and it transmits the operation signals of the multifunction switch and preset switch.
PRESET SWITCH	• Operation panel is equipped with the centralized switch where audio and air conditioner operations are integrated. • The preset switch is connected to the multifunction switch by hard-wire, and it transmits the operation signal to the multifunction switch.
STEERING SWITCH	• Operations such as audio and hands-free phone are possible. • Steering switch signal (operation signal) is output to AV control unit.
MICROPHONE	• Used only when hands-free phone is operated. • Outputs Mic. signal (TEL voice signal) to the TEL adapter unit. • The power (Mic. VCC) is supplied from TEL adapter unit.
AUXILIARY INPUT JACKS	Auxiliary input jacks Image and sound signal are transmitted to AV control unit.
ANTENNA AMP.	• Radio signal received by glass antenna is amplified and transmitted to AV control unit. • Power (antenna amp. ON signal) is supplied from AV control unit.
TEL ADAPTER UNIT	• It is connected with the AV control unit via AV communication and controlled with the AV control unit. • Inputs the TEL voice signal from TEL antenna and outputs it to the AV control unit.
TEL ANTENNA	Receives the TEL voice signal and outputs it to the TEL adapter unit.
SATELLITE RADIO TUNER	• It is controlled with the AV control unit and serial communication (communication signal and request signal). • Inputs the satellite radio signal from satellite radio antenna and outputs the satellite radio sound signal to the AV control unit.
SATELLITE RADIO ANTENNA	Satellite radio wave is received and transmitted to satellite radio tuner.

WITH NAVIGATION

WITH NAVIGATION : System Diagram

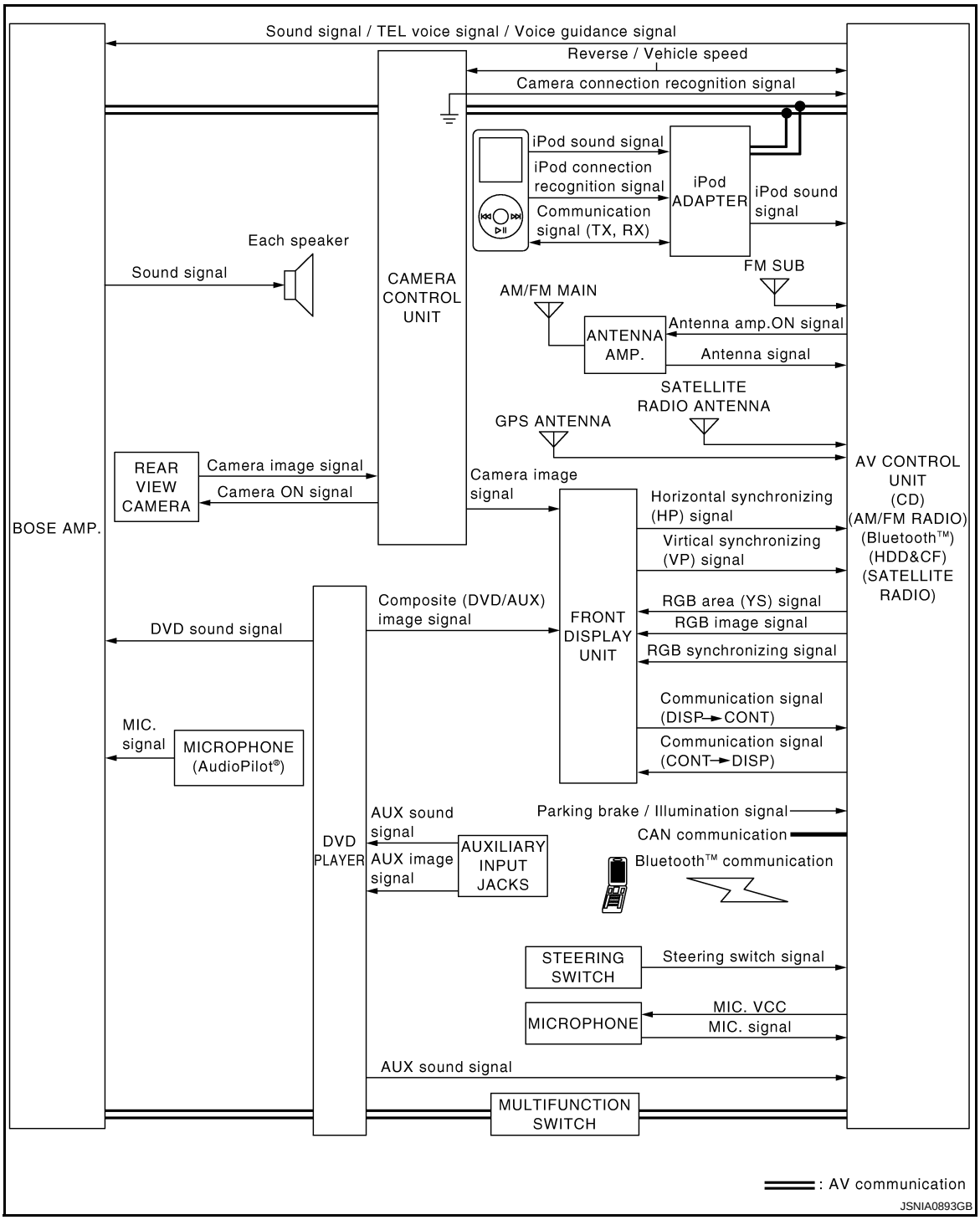
INFOID:0000000004155610

WITH NAVIGATION



NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

WITH NAVIGATION AND DVD PLAYER



NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

WITH NAVIGATION : System Description

INFOID:0000000004155611

Multi AV system means that the following systems are integrated.

System name	System explanation
NAVIGATION SYSTEM	AV-27, "System Diagram"
AUDIO SYSTEM	AV-37, "WITH NAVIGATION : System Diagram"
REAR VIEW MONITOR SYSTEM	AV-32, "System Diagram"

System name	System explanation
HANDS-FREE PHONE SYSTEM	AV-45, "WITH NAVIGATION : System Diagram"
VEHICLE INFORMATION SYSTEM	• Status of audio, climate control system, fuel economy, maintenance and navigation is displayed. • AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM, unified meter and A/C amp. and BCM.
AUXILIARY INPUT SYSTEM	Refer to the following “AUXILIARY INPUT SYSTEM”.
VOICE RECOGNITION SYSTEM	Refer to the following “VOICE RECOGNITION SYSTEM”.
TOUCH PANEL SYSTEM	Refer to the following “TOUCH PANEL SYSTEM”.

- AV control unit function by transmitting/receiving data one by one with each unit (slave unit) that configures them completely as a master unit by connecting between units that configure MULTI AV system with two AV communication lines (H, L).
- Two AV communication lines (H, L) adopt a twisted pair line that is resistant to noise.
- AV control unit is connected by CAN communication, and it receives data signal from ECM, unified meter and A/C amp. It computes and displays fuel economy information value with the obtained information. Transmitting/receiving of data signal is performed by BCM. Also, it transmits the required signal of vehicle setting and receives the response signal.
- AV control unit is connected with front display unit via serial communication, and it transmits the required signal of display and display control and receives the response signal from display.

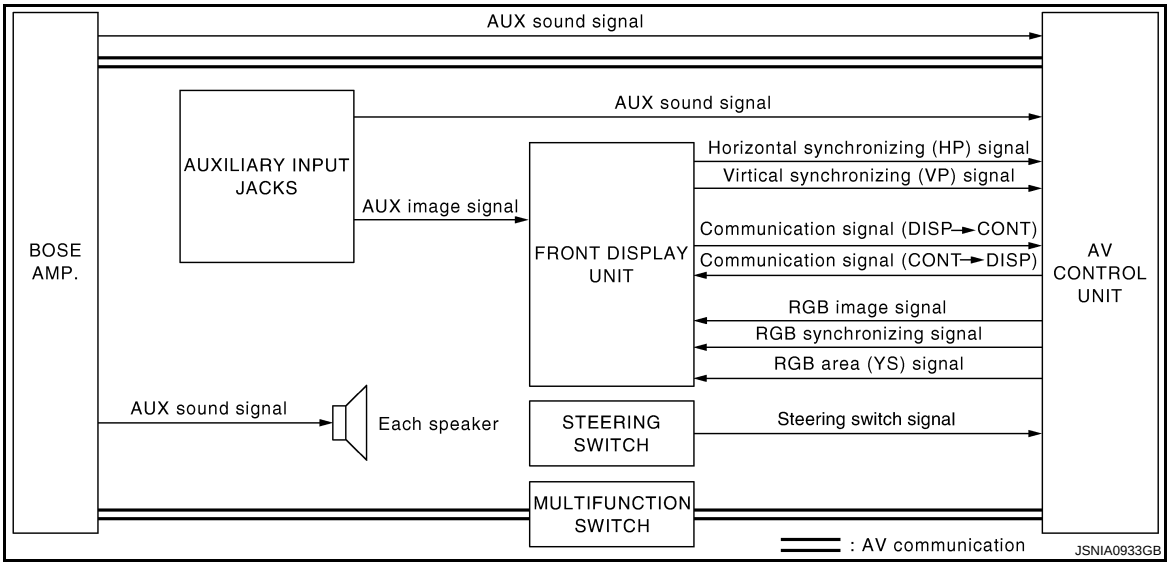
NOTE:
AV control unit can perform CONSULT-III self-operating function and on board self-diagnosis.
- CONSULT-III self diagnosis: Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".
- On board self diagnosis: Refer to AV-57, "WITH NAVIGATION : Diagnosis Description".

AUXILIARY INPUT SYSTEM

- Image and sound can be output from an external device by connecting a device with auxiliary input jacks.
- Operation can be performed with multifunction switch and steering switch. Multifunction switch transmits operation signal to AV control unit by AV communication.

With Navigation

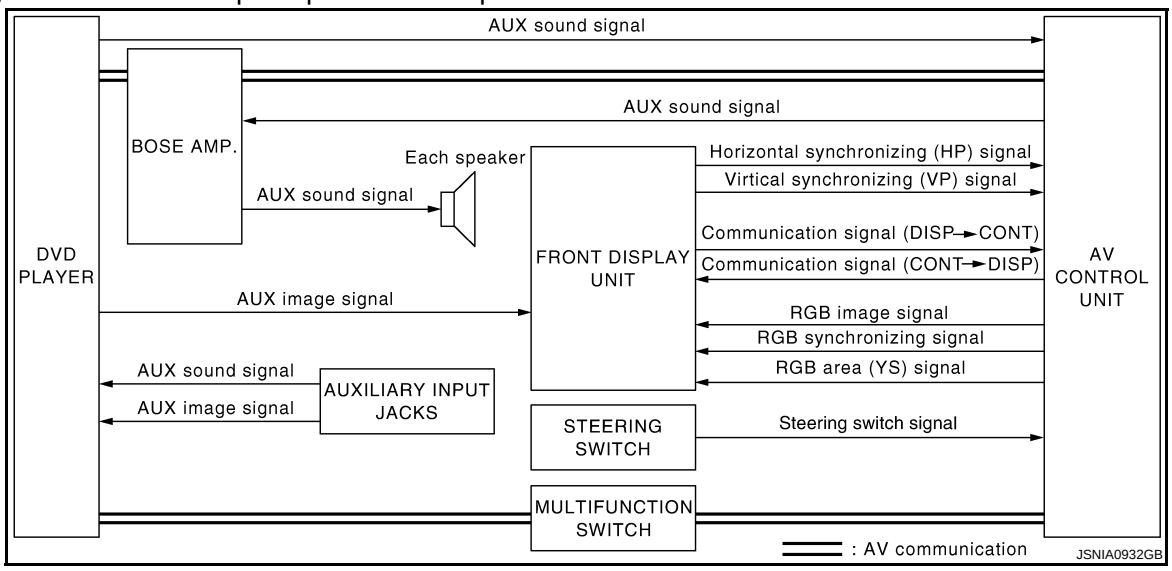
- The AUX image signal is input from the auxiliary input jacks to the front display unit.
- The AUX sound signal is input from the auxiliary input jacks to the AV control unit. The AV control unit outputs the AUX sound signal to the BOSE amp. The BOSE amp. output the AUX sound signal to each speaker.



With Navigation And DVD Player

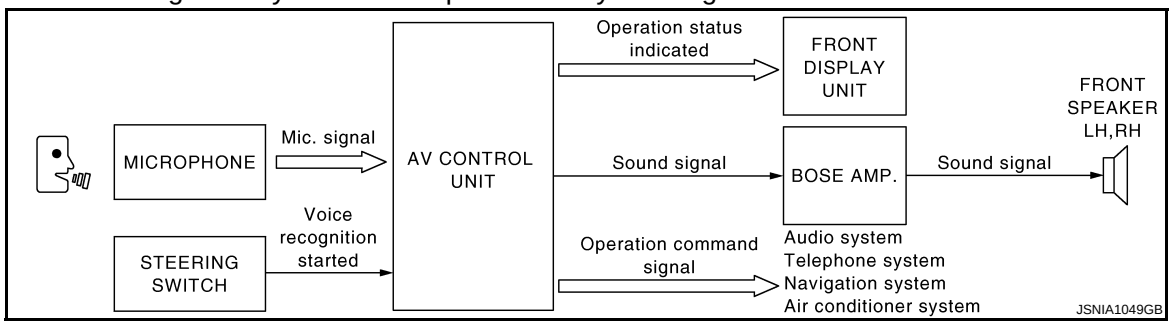
- The AUX image signal is input from the auxiliary input jacks to the DVD player. The DVD player outputs the AUX image signal to the front display unit.

- The AUX sound signal is input from the auxiliary input jacks to the DVD player. The DVD player outputs the AUX sound signal to the AV control unit. The AV control unit outputs the AUX sound signal to the BOSE amp., and the BOSE amp. outputs to each speaker.



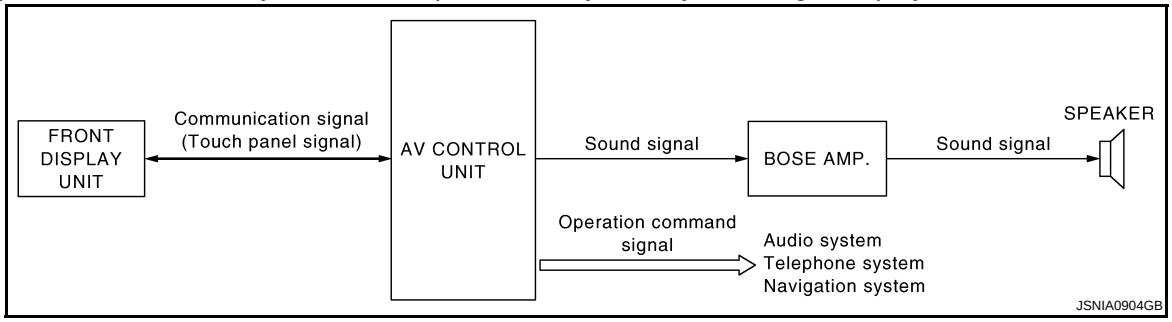
VOICE RECOGNITION SYSTEM

- Each operation of multi AV system can be performed by inputting sound to microphone.
- Start of sound recognition system can be performed by steering switch.



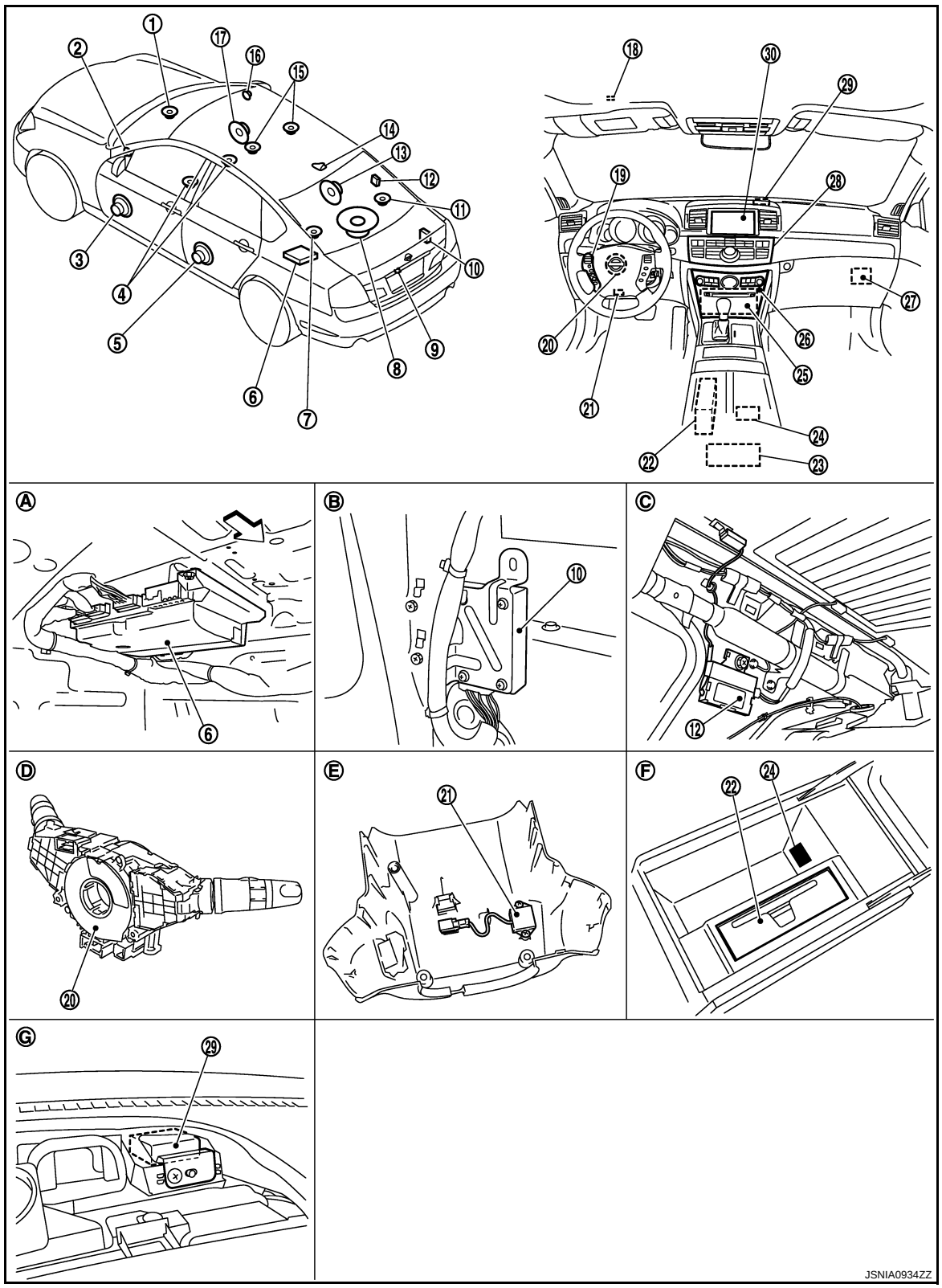
TOUCH PANEL SYSTEM

Each operation of multi AV system can be performed by directly touching a display.



WITH NAVIGATION : Component Parts Location

INFOID:0000000004155612



1. Center speaker
2. Tweeter LH
3. Front door speaker LH
4. Driver seat speaker
5. Rear door speaker LH
6. BOSE amp.
7. Rear surround speaker LH
8. Woofer
9. Rear view camera
10. Camera control unit
11. Rear surround speaker RH
12. Antenna amp.

13. Rear door speaker RH
14. Satellite radio antenna
15. Passenger seat speaker
16. Tweeter RH
17. Front door speaker RH
18. Microphone
19. Steering switch
20. Steering angle sensor
21. Microphone (for AudioPilot®)
22. DVD player
23. Auxiliary input jacks
24. iPod connector
25. AV control unit
26. Preset switch
27. iPod adapter
28. Multifunction switch
29. GPS antenna
30. Front display unit
A. Under rear parcel LH side
B. Trunk side finisher (RH) is removed
C. Rear pillar finisher (RH) is removed
D. Spiral cable part
E. Steering column cover is removed
F. In center console
G. Center ventilator grille is removed

⇨: Vehicle front

WITH NAVIGATION : Component Description

INFOID:0000000004155613

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.
FRONT DISPLAY UNIT	• Front display image is controlled by the serial communication from AV control unit. • Synchronize signal (HP, VP) is output to AV control unit. • Touch panel function can be operated for each system by touching a display directly. • RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing). Camera image signal is input from camera control unit. • Auxiliary image signal and DVD image signal are input from the DVD player (with DVD player models). • Auxiliary image signal is input from the auxiliary input jacks. (without DVD player models)

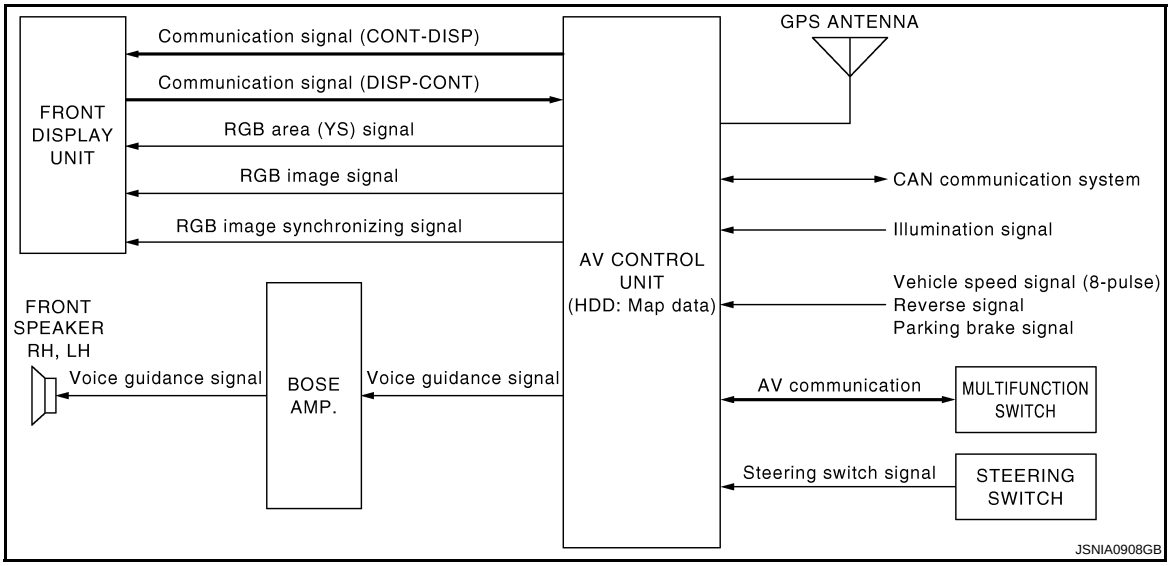
Part name	Description
BOSE AMP.	• It is connected via AV communication and controlled by the AV control unit. • It receives the voice guidance signal from AV control unit and output it to the front speaker. • It controls sound volume of each speaker when outputting TEL voice and voice guidance. • It subjects to AudioPilot® processing when receiving sound signal from microphone for AudioPilot®.
	BOSE 2ch system (without DVD player models) • It amplifies the sound signal from the AV control unit and output it to each speaker.
	BOSE surround audio 5.1ch system (with DVD player models) • It amplifies the sound signal from the AV control unit and the DVD sound signal from DVD player, and then output them to each speaker. • It subjects to Centerpoint® processing.
WOOFER	• Outputs sound signal from BOSE amp. • Outputs low-pitched sound.
FRONT DOOR SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
TWEETER	• Outputs sound signal from BOSE amp. • Outputs high range sound.
REAR DOOR SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
CENTER SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
SEAT SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
REAR SURROUND SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
MULTIFUNCTION SWITCH	• Operation panel is equipped with the centralized switch where audio, auxiliary input and navigation operations are integrated. • The multifunction switch is connected via AV communication, and it transmits the operation signals of the multifunction switch and preset switch.
PRESET SWITCH	• Operation panel is equipped with the centralized switch where audio and air conditioner operations are integrated. • The preset switch is connected to the multifunction switch by hard-wire, and it transmits the operation signal to the multifunction switch.
DVD PLAYER	• It transmits the playback DVD image signal and the input AUX image signal to the front display unit. It also transmits the input AUX sound signal to the AV control unit. • It transmits the playback DVD sound signal to the BOSE amp.
CAMERA CONTROL UNIT	• Camera image signal is input from rear view camera. Camera image signal output to front display unit. • Power (camera ON signal) is transmitted to rear view camera. • AV control unit recognizes the presence of camera system with camera connection recognition signal. • Camera control unit is connected via AV communication, and it receives the control signal and steering angle signal from the AV control unit.
REAR VIEW CAMERA	• The image of vehicle rear view is transmitted to camera control unit. • It receives the power (camera ON signal) from the camera control unit and operates.
STEERING SWITCH	• Operations for audio, hands-free phone, audio response and navigation, etc. are possible. • Steering switch signal (operation signal) is output to AV control unit.
MICROPHONE	• Used for hands-free phone operation and voice recognition. • Mic. signal is transmitted to AV control unit. • Power (Mic. VCC) is supplied from AV control unit.

Part name	Description
AUXILIARY INPUT JACKS	Without DVD player models • Image signal of auxiliary input is transmitted to front display unit, and auxiliary sound signal is transmitted to AV control unit. With DVD player models • Image and sound signal of auxiliary input is transmitted to DVD player.
GPS ANTENNA	GPS signal is received and transmitted to AV control unit.
ANTENNA AMP.	• Radio signal received by glass antenna is amplified and transmitted to AV control unit. • Power (antenna amp ON signal) is supplied from AV control unit.
SATELLITE RADIO ANTENNA	Satellite radio wave is received and transmitted to AV control unit.
iPod ADAPTER	• Inputs iPod sound signal from iPod®, and outputs iPod sound signal to AV control unit. • Receiving/transmitting of iPod® operation signals are performed as follows: - between AV control unit and iPod adapter: AV communication. - between iPod® and iPod adapter: serial communication.
STEERING ANGLE SENSOR	It is connected to the AV control unit and transmits the steering angle signal via CAN communication.
MICROPHONE (for AudioPilot®)	• Used for AudioPilot®. • Mic. signal is transmitted to BOSE amp.

NAVIGATION SYSTEM

System Diagram

INFOID:0000000004155614



System Description

INFOID:0000000004155615

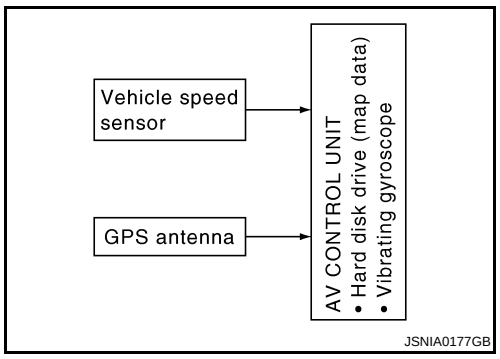
DESCRIPTION

- The AV control unit controls navigation function while GPS tuner has built-in map data, GYRO (angle speed sensor), on the HDD (Hard Disk Drive).
- The AV control unit inputs operation signal with communication signal, through display (touch panel) and multifunction switch and steering switch.
- Guide sound is output to front speaker through BOSE amp. from AV control unit when operating navigation system.
- A vehicle position is calculated with the GYRO (angle speed sensor), vehicle sensor, signal from GPS satellite and map data stored on HDD (Hard Disk Drive), and transmits the map image signal (RGB image, RGB area, RGB image synchronizing) to the display.

POSITION DETECTION PRINCIPLE

The navigation system periodically calculates the current vehicle position according to the following three types of signals.

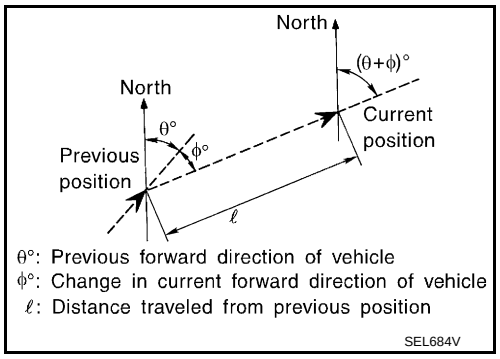
- Travel distance of the vehicle as determined by the vehicle speed sensor
- Vehicle turning angle determined by the gyroscope (angular speed sensor)
- The travel direction of the vehicle determined by the GPS antenna (GPS information)



The current position of the vehicle is then identified by comparing the calculated vehicle position with map data, which is stored in the HDD (Hard Disk Drive) (map-matching), and indicated on the screen with a current location mark. More accurate data is used by comparing position detection results from GPS to the map-matching.

The current position is calculated by detecting the travel distance from the previous calculation point, and its direction change.

- Travel distance
  The travel distance is generated from the vehicle speed sensor input signal. The automatic distance correction function is adopted for preventing a miss-detection of the travel distance because of tire wear etc.
- Travel direction
  The gyroscope (angular velocity sensor) and GPS antenna (GPS information) generate the change of the travel direction. Both have advantages and disadvantages as per the following descriptions.

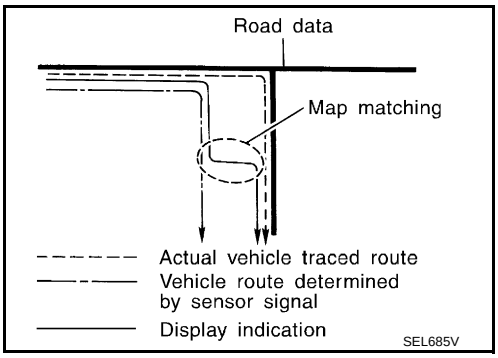


Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	The turning angle is precisely detected.	Errors are accumulated when driving a long distance without stopping.
GPS antenna (GPS information)	The travel direction (North/South/East/West) is detected.	The travel direction is not precisely detected when driving slowly.

Input signals are prioritized in each situation. However, this order of priority may change in accordance with more detailed travel conditions so that the travel direction is detected more accurately.

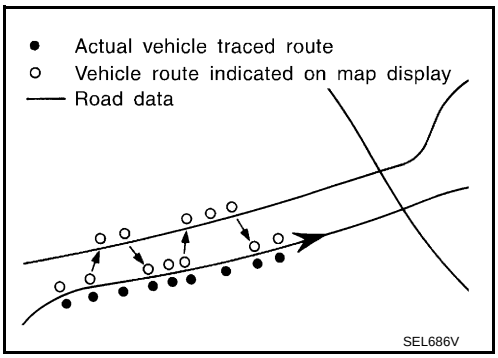
MAP-MATCHING

Map-matching repositions the vehicle on the road map when a new location is judged to be more accurate. This is done by comparing the current vehicle position (calculated by the normal position detection method) from the map data stored in the HDD (Hard Disk Drive).

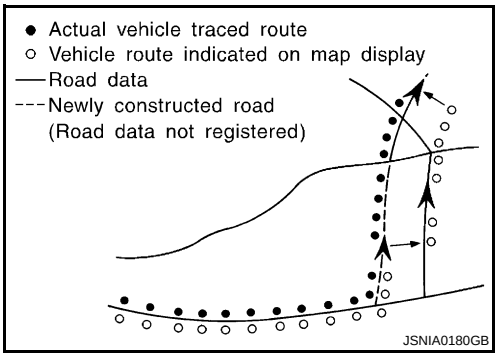


There is a possibility that the vehicle position may not be corrected in the following case, and when vehicle is driven over a certain distance or time in which GPS information is hard to receive. Correct manually the current location mark on the screen.

- In map-matching, several alternative routes are prepared and prioritized in addition to the road judged as currently driving on.
  Therefore, due to errors in the distance and/or direction, an incorrect road may be prioritized, and the current location mark may be repositioned to the incorrect road.
  If two roads are running in parallel, they are of the same priority. Therefore, the current location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road, etc.

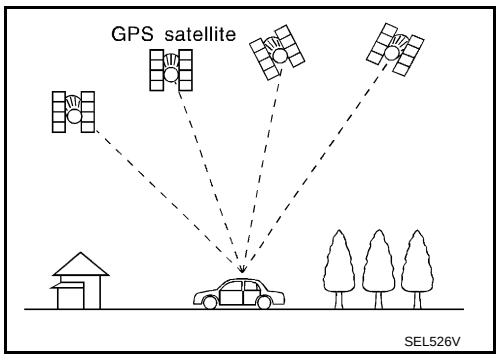


- Map-matching does not function correctly when road on which the vehicle is driving is new, etc. and not recorded in the map data. Also, map-matching does not function correctly when road pattern stored in the map data and the actual road pattern are different due to repair, etc.
  Therefore, the map-matching function judges other road as a currently driving road if the road is not in the map, and displays the current location mark on it. Later, the current location mark may be repositioned to the road if the correct road is detected.
- Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data is limited. Therefore, correction by map-matching is not possible when there is an excessive gap between current vehicle position and the position on the map.



GPS (GLOBAL POSITIONING SYSTEM)

GPS (Global Positioning System) is developed for and is controlled by the US Department of Defense. The system utilizes GPS satellites (NAVSTAR), transmitting out radio waves while flying on an orbit around the earth at an altitude of approximately 21,000 km.
The receiver calculates the travel position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves that four or more GPS satellites transmit (three-dimensional positioning). The GPS receiver calculates the travel position in two dimensions (latitude/longitude) with the previous altitude data if the GPS receiver receives only three radio waves (two-dimensional positioning). GPS position correction is not performed while stopping the vehicle.

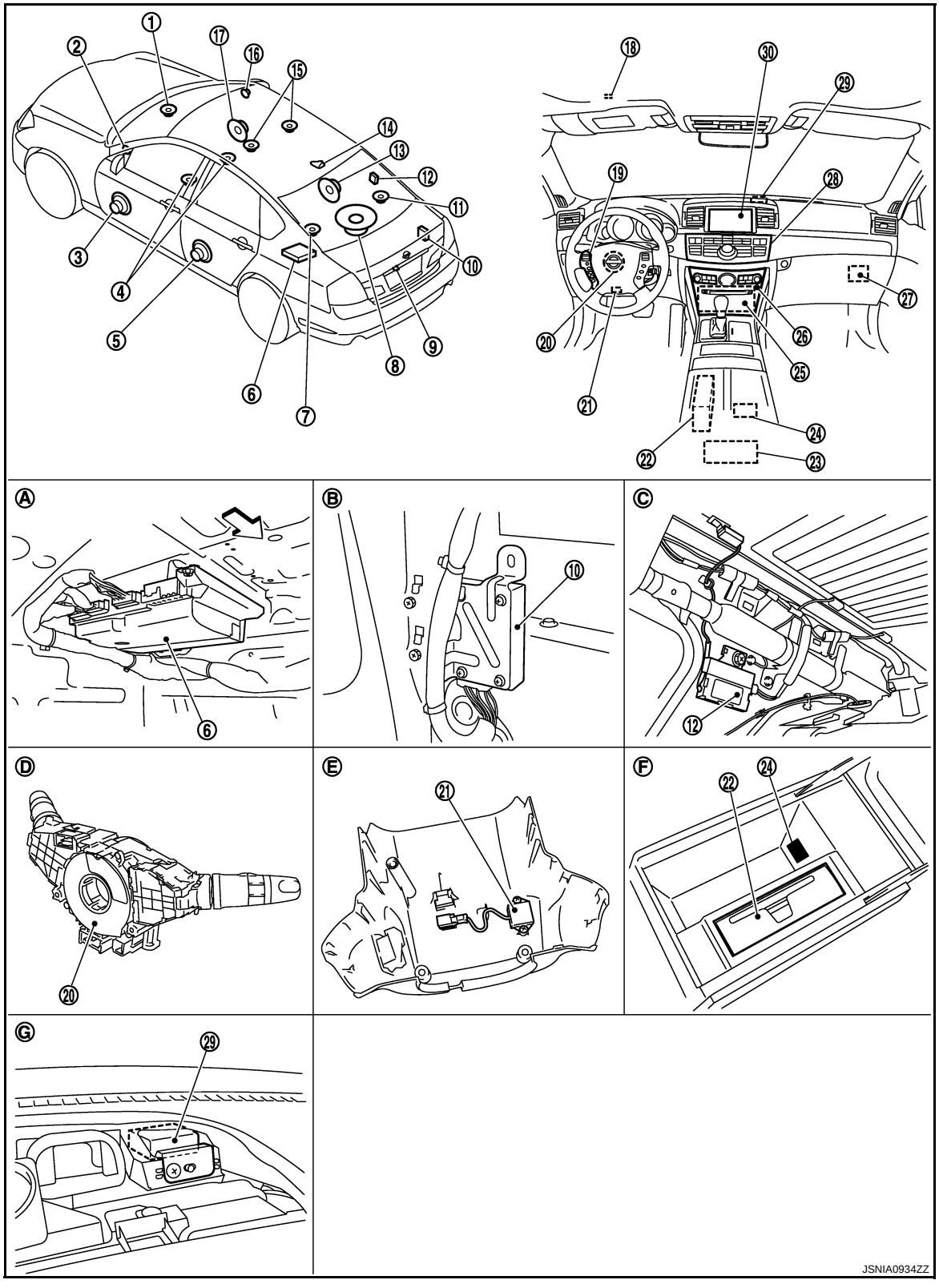


Accuracy of the GPS will deteriorate under the following conditions:
- In two-dimensional positioning, GPS accuracy will deteriorate when altitude of the vehicle position changes.
- The position of GPS satellite affects GPS detection precision. The position detection may not be precisely performed.
- The position detection is not performed if GPS receiver does not receive radio waves from GPS satellites. (Inside a tunnel, parking in a building, under an elevated highway etc.) GPS receiver may not receive radio waves from GPS satellites if any object is placed on the GPS antenna.

NOTE:
- The detection result has an error of approximately 10 m even with a high-precision three dimensional positioning.
- There may be cases when the accuracy is lowered and radio waves are stopped intentionally because the GPS satellite signal is controlled by the US trace control center.

Component Parts Location

INFOID:0000000004155616



1. Center speaker
2. Tweeter LH
3. Front door speaker LH
4. Driver seat speaker
5. Rear door speaker LH
6. BOSE amp.
7. Rear surround speaker LH
8. Woofer
9. Rear view camera
10. Camera control unit
11. Rear surround speaker RH
12. Antenna amp.

13. Rear door speaker RH
14. Satellite radio antenna
15. Passenger seat speaker
16. Tweeter RH
17. Front door speaker RH
18. Microphone
19. Steering switch
20. Steering angle sensor
21. Microphone (for AudioPilot®)
22. DVD player
23. Auxiliary input jacks
24. iPod connector
25. AV control unit
26. Preset switch
27. iPod adapter
28. Multifunction switch
29. GPS antenna
30. Front display unit
A. Under rear parcel LH side
B. Trunk side finisher (RH) is removed
C. Rear pillar finisher (RH) is removed
D. Spiral cable part
E. Steering column cover is removed
F. In center console
G. Center ventilator grille is removed
⇨: Vehicle front

Component Description

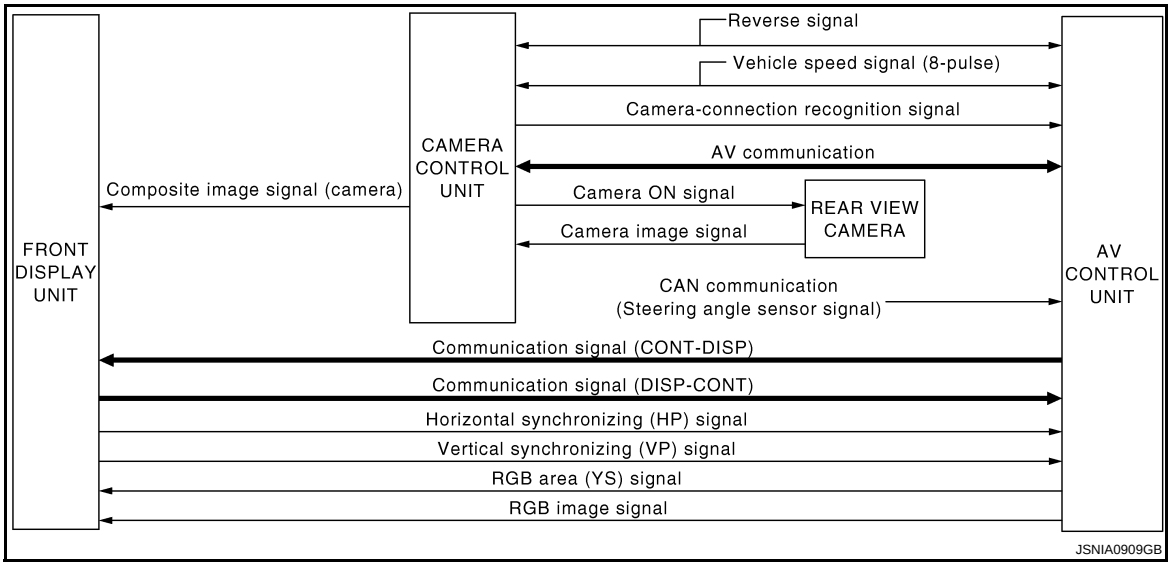
INFOID:0000000004155617

Part name	Description
AV CONTROL UNIT	• It is the master unit that controls each operation of the Navigation system. • The HDD (Hard Disk Drive) is built in, and the map data is stored in HDD. • The RGB image signal (map information) is output to the front display unit. • The voice guidance signal is output to the BOSE amp.
FRONT DISPLAY UNIT	• Map image signal is input from AV control unit, and it is indicated on the display. • Each operation of navigation can be performed by the touch panel function.
BOSE AMP.	Voice guidance signal is input from AV control unit, and it is output to front speakers.
FRONT DOOR SPEAKER	Voice guidance signal from BOSE amp. is output.
MULTIFUNCTION SWITCH	• Each operation of navigation can be performed. • Connected with preset switch via cable and operation signal is transmitted to AV control unit via AV communication.
STEERING SWITCH	• Each operation of navigation, etc. can be performed. • Switch operating signal is output to AV control unit.
GPS ANTENNA	GPS signal is received and is output to AV control unit.

REAR VIEW MONITOR SYSTEM

System Diagram

INFOID:0000000004155618



System Description

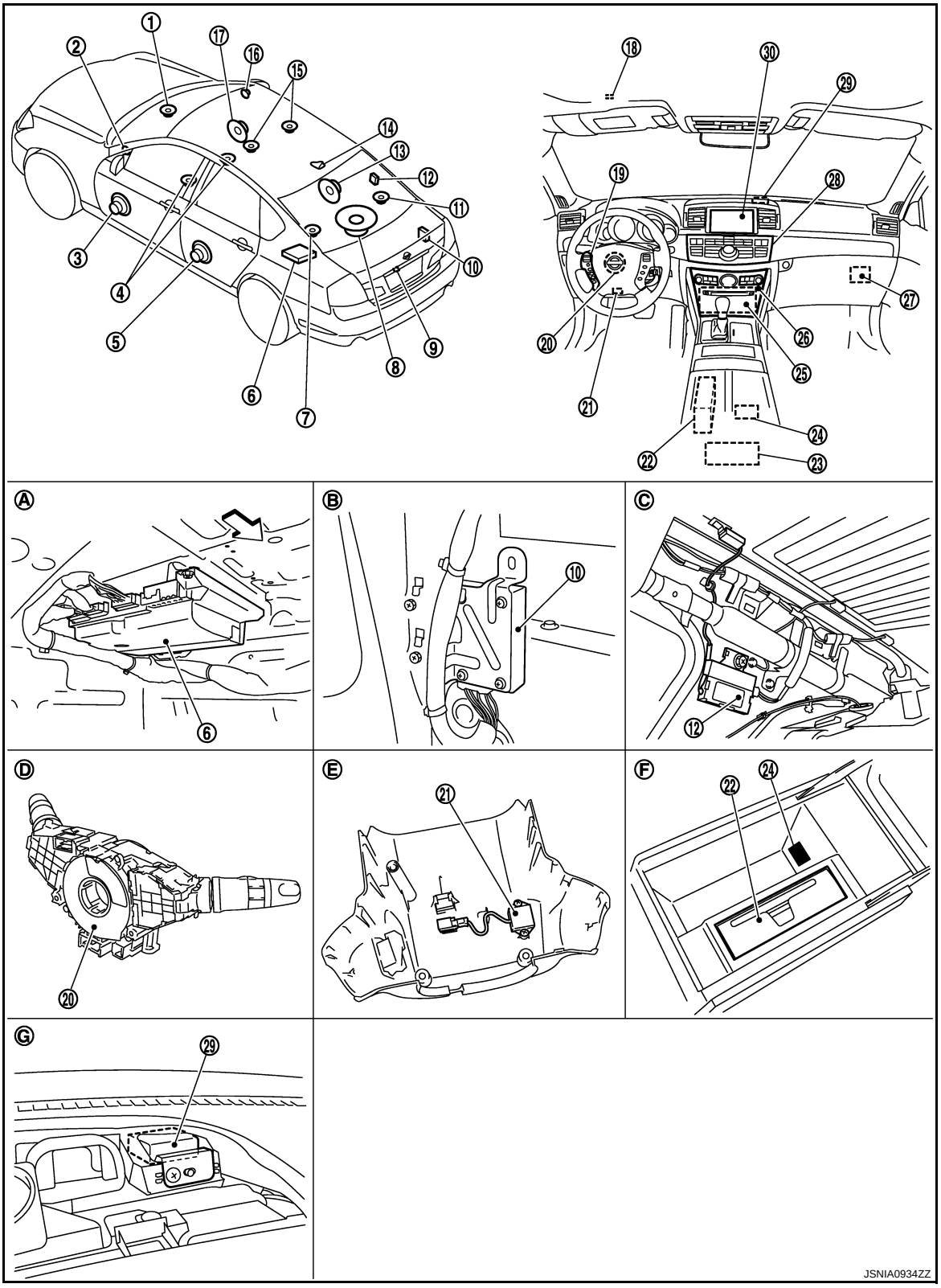
INFOID:0000000004155619

CAMERA IMAGE OPERATION PRINCIPLE

- Power is supplied to rear view camera from camera control unit and outputs camera image signal to camera control unit when selector lever is set to R position and the reverse signal on camera control unit is input.
- Camera control unit synthesizes guide lines and possible route lines with camera image signal from rear view camera, and transmits camera image signal to the front display unit. In this case, since the reverse signal is also input to AV control unit, the AV control unit recognizes the selector lever as in R position, and it switches serial communication signal between AV control unit and front display unit, and image that is displayed on the front display unit by RGB image signal with rear view monitor image. In addition, possible route lines are controlled by original sensor signal from steering angle sensor.
- The AV control unit determines whether rear view camera is equipped or not, based on the presence of camera connection recognition signal. It switches to rear view monitor image at the time of reverse signal input when it is equipped.
- Warning message under the rear view monitor display is described by AV control unit.
- AV control unit is connected in communication with camera control unit and front display unit, and it controls operation of rear view monitor system.

Component Parts Location

INFOID:0000000004155620



1. Center speaker
2. Tweeter LH
3. Front door speaker LH
4. Driver seat speaker
5. Rear door speaker LH
6. BOSE amp.
7. Rear surround speaker LH
8. Woofer
9. Rear view camera
10. Camera control unit
11. Rear surround speaker RH
12. Antenna amp.

13. Rear door speaker RH
14. Satellite radio antenna
15. Passenger seat speaker
16. Tweeter RH
17. Front door speaker RH
18. Microphone
19. Steering switch
20. Steering angle sensor
21. Microphone (for AudioPilot®)
22. DVD player
23. Auxiliary input jacks
24. iPod connector
25. AV control unit
26. Preset switch
27. iPod adapter
28. Multifunction switch
29. GPS antenna
30. Front display unit
A. Under rear parcel LH side
B. Trunk side finisher (RH) is removed
C. Rear pillar finisher (RH) is removed
D. Spiral cable part
E. Steering column cover is removed
F. In center console
G. Center ventilator grille is removed
⇨: Vehicle front

Component Description

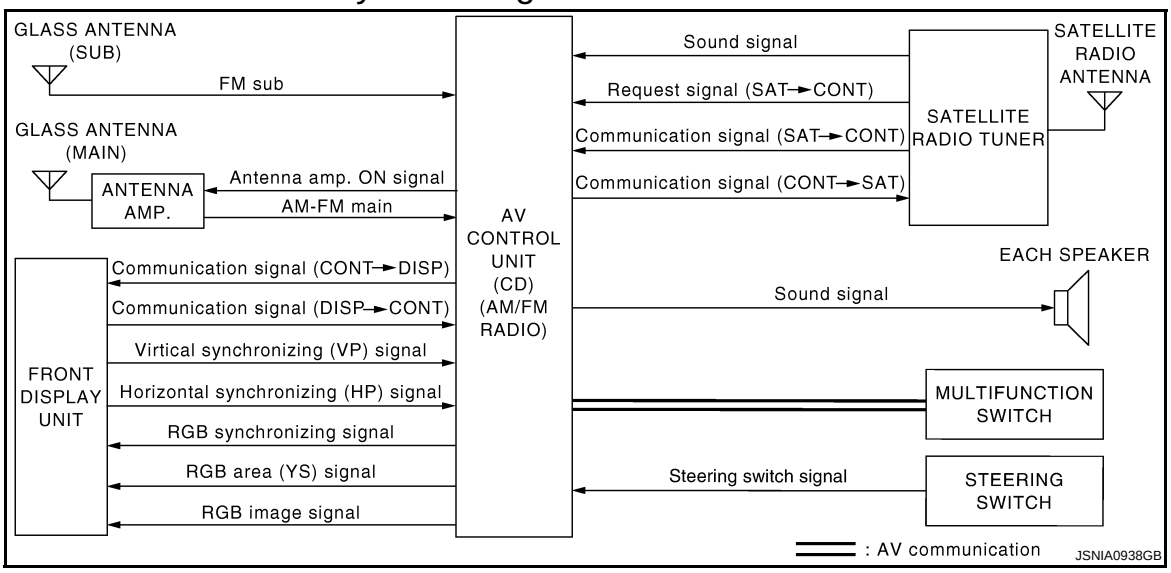
INFOID:0000000004155621

Part name	Description
AV CONTROL UNIT	• Image on display is changed to rear view monitor image with serial communication between AV control unit and front display unit. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • Warning displayed in rear view monitor image is illustrated.
FRONT DISPLAY UNIT	• Camera image signal is transmitted from camera control unit, and RGB image signal for warning display is transmitted from AV control unit. • Rear view monitor image is changed with the communication for AV control unit.
CAMERA CONTROL UNIT	• Camera image signal is input from rear view camera, and camera image is indicated on the front display unit. • Power (camera ON signal) is transmitted to rear view camera. • Camera control unit is connected via AV communication, and it receives the control signal and steering angle signal from the AV control unit. • AV control unit recognizes the presence of camera system with camera connection recognition signal.
REAR VIEW CAMERA	• The image of vehicle rear view is transmitted to camera control unit. • It receives the power (camera ON signal) from the camera control unit and operates.
STEERING ANGLE SENSOR	It is connected to the AV control unit and transmits the steering angle signal via CAN communication.

AUDIO SYSTEM
WITHOUT NAVIGATION

WITHOUT NAVIGATION : System Diagram

INFOID:0000000004155622



WITHOUT NAVIGATION : System Description

INFOID:0000000004155623

The audio system is equipped with the following functions. Each function is operated with multifunction switch, preset switch or steering switch. It indicates the operation status of AUDIO to the front display.

FUNCTION DESCRIPTION

Function
AM/FM radio
Satellite radio
CD
AUX

Operating Signal
- Audio system operation can be performed with multifunction switch, preset switch, and steering switch.
- Operating signal is transmitted to AV control unit with AV communication when it is operated by multifunction switch or preset switch.
- Operating signal is transmitted to AV control unit with steering switch signal when it is operated by steering switch.

Screen Front Display
- Switching of front display is performed with serial communication between front display unit and AV control unit.
- The image signal to front display operating condition is performed with RGB image signal, RGB area signal and RGB image synchronizing signal.

AM/FM Radio Mode
- AM/FM radio tuner is built into AV control unit.
- Audio signal is received by glass antenna, next it is amplified by antenna amp., and finally it is input to AV control unit. AV control unit outputs the audio signal to each speaker.

Satellite Radio Mode
- Satellite radio tuner is controlled by serial communication and request signal with AV control unit.
- Audio signal (satellite radio) is received by satellite radio antenna, and it is input to satellite radio tuner. Satellite radio tuner outputs audio signal to AV control unit. The sound signal is also outputted to each speaker.

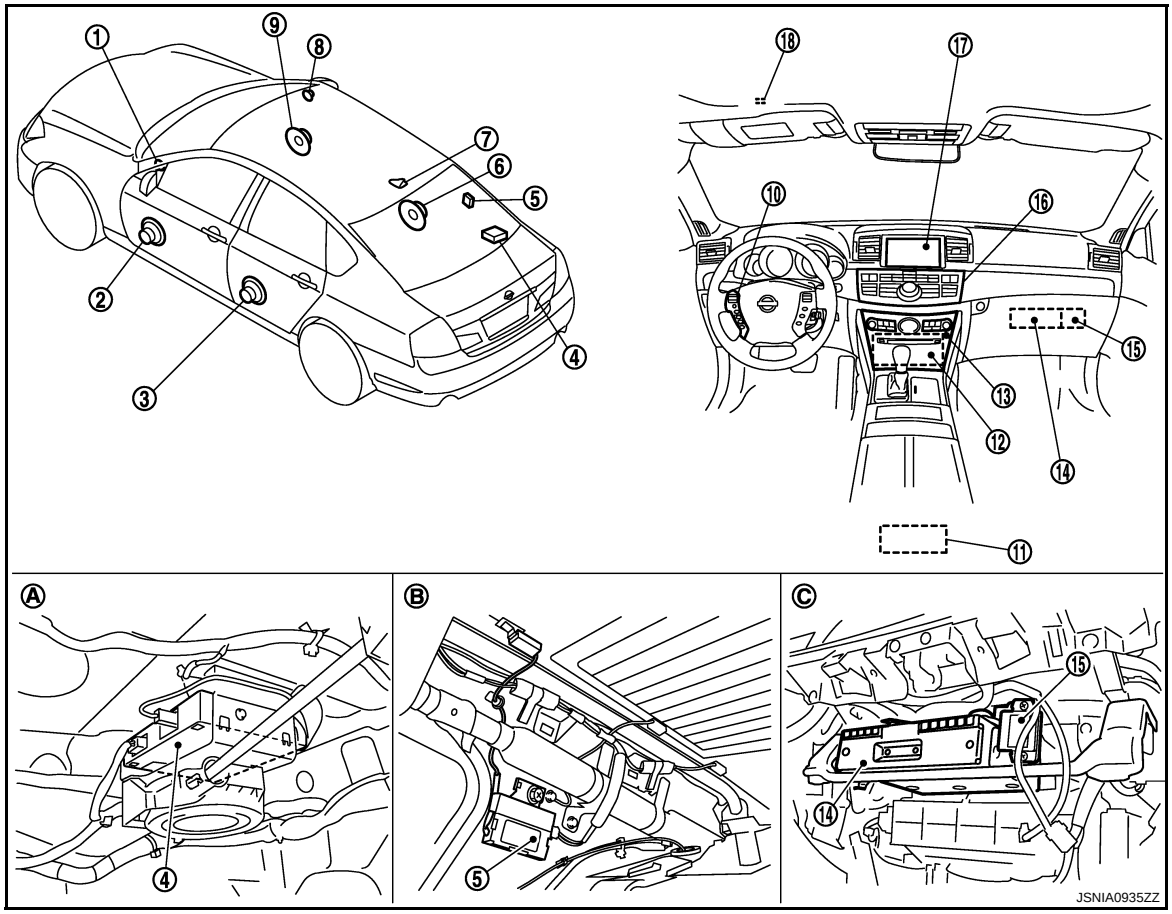
CD Mode

- CD function is built into AV control unit.
- AV control unit outputs audio signal to each speaker when CD is inserted to AV control unit.

AUX Mode
Refer to AV-15, "WITHOUT NAVIGATION : System Description".

WITHOUT NAVIGATION : Component Parts Location

INFOID:0000000004155624



1.	Tweeter LH	2.	Front door speaker LH	3.	Rear door speaker
4.	Satellite radio tuner	5.	Antenna amp.	6.	Rear door speaker RH
7.	Satellite radio antenna	8.	Tweeter RH	9.	Front door speaker RH
10.	Steering switch	11.	Auxiliary input jacks	12.	AV control unit
13.	Preset switch	14.	TEL adapter unit	15.	TEL antenna
16.	Multifunction switch	17.	Front display unit	18.	Microphone
A.	Under rear parcel RH side	B.	Rear pillar finisher (RH) is removed	C.	Glove box cover is removed

WITHOUT NAVIGATION : Component Description

INFOID:0000000004155625

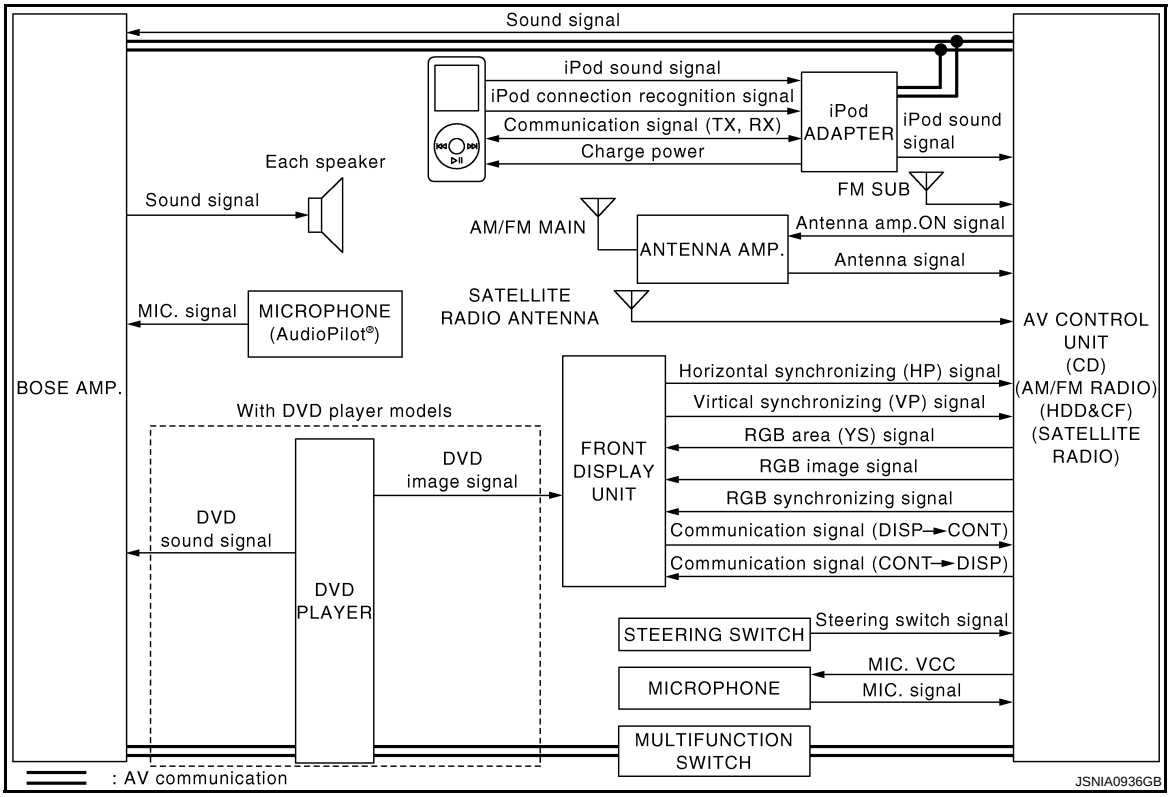
Part name	Description
AV CONTROL UNIT	• The AM/FM receiving function and the CD playing function are equipped. • Outputs the audio signal from each function to each speaker.
FRONT DISPLAY UNIT	• Front display unit image is controlled by the serial communication from AV control unit. • RGB image signal (audio operation condition) is input from AV control unit.
FRONT DOOR SPEAKER	• Outputs sound signal from AV control unit. • Outputs high, mid and low range sounds.

Part name	Description
REAR DOOR SPEAKER	• Outputs sound signal from AV control unit. • Outputs high, mid and low range sounds.
TWEETER	• Outputs sound signal from AV control unit. • Outputs high range sound.
MULTIFUNCTION SWITCH	• Each audio operation can be operated. • The multifunction switch is connected via AV communication, and it transmits the operation signals of the multifunction switch and preset switch.
PRESET SWITCH	• Each audio operation can be operated. • The preset switch is connected to the multifunction switch by hard-wire, and it transmits the operation signal to the multifunction switch.
STEERING SWITCH	• Each audio operation can be operated. • Steering switch signal (operation signal) is output to AV control unit.
ANTENNA AMP.	• Radio signal received by glass antenna is amplified and transmitted to AV control unit. • Power (antenna amp. ON signal) is supplied from AV control unit.
SATELLITE RADIO TUNER	• It is controlled with the AV control unit and serial communication (communication signal and request signal). • Inputs the satellite radio signal from satellite radio antenna and outputs the satellite radio sound signal to the AV control unit.
SATELLITE RADIO ANTENNA	Satellite radio wave is received and transmitted to satellite radio tuner.

WITH NAVIGATION

WITH NAVIGATION : System Diagram

INFOID:0000000004155626



WITH NAVIGATION : System Description

INFOID:0000000004155627

The audio system is equipped with the following functions. Each function is operated with multifunction switch, preset switch, touch panel, steering switch or audio recognition. Operation status of AUDIO is indicated at front display.

FUNCTION DESCRIPTION

The audio system is equipped with the following functions. Each function is operated with multifunction switch, preset switch, touch panel, steering switch or audio recognition. Operation status of AUDIO is indicated at front display unit.

Function
AM/FM radio
Satellite radio
CD
Music Box (Hard Disk Drive)
CF (Compact Flash)
iPod connection
Audiopilot®
Centerpoint® (with DVD player models)
DVD (with DVD player models)
AUX

Operating Signal

Audio system operation can be performed with multifunction switch, preset switch, steering switch, touch panel function or voice recognition function.

- Operating signal is transmitted to AV control unit with AV communication when it is operated by multifunction switch or preset switch.
- Operating signal is transmitted to AV control unit with steering switch signal when it is operated by steering switch.
- Audio system operation can be performed with multifunction switch, preset switch, steering switch, touch panel function or voice recognition function.
- Refer to AV-20, "WITH NAVIGATION : System Description" for explanation of voice recognition function and touch panel function.

Screen Front Display

- Switching of front display is performed with serial communication between front display unit and AV control unit.
- The image signal to front display operating condition is performed with RGB image signal, RGB area signal and RGB image synchronizing signal.

AM/FM Radio Mode

- AM/FM radio tuner is built into AV control unit.
- Audio signal is received by glass antenna, next it is amplified by antenna amp., and finally it is input to AV control unit. Audio signal is input to BOSE amp. and BOSE amp. outputs to each speaker for AV control unit.

Satellite Radio Mode

- Satellite radio tuner is built into AV control unit.
- Audio signal (satellite radio) is received by satellite radio antenna, and it is input to AV control unit. AV control unit outputs audio signal to BOSE amp. The sound signal is also outputted from BOSE amp. to each speaker.

CD Mode

- CD function is built into AV control unit.
- AV control unit outputs audio signal to BOSE amp. and BOSE amp. outputs to each speaker when CD is inserted to AV control unit.

Music Box Mode

- Music CD data is stored on HDD that is built into AV control unit, and it can be played.
- AV control unit outputs music (audio signal) that is stored on HDD to BOSE amp., and BOSE amp. outputs to each speaker.

CF Mode

- AV control unit has built in CF replay function.
- Music (audio signal) that is stored in CF outputs to BOSE amp., and BOSE amp. outputs to each speaker when CF is inserted into AV control unit.

iPod Connection

- Connect iPod® and iPod adapter with wire harness and iPod adapter input iPod sound signal from iPod®. When iPod mode is selected, iPod adapter output iPod sound signal to AV control unit. AV control unit output sound signal to BOSE amp., and BOSE amp. output sound signal to each speaker.
- Receiving/transmitting of iPod® operation signals are performed as follows:
- between AV control unit and iPod adapter: AV communication.
- between iPod® and iPod adapter: serial communication.
- The iPod® connection status can be recognized whether iPod adapter receives iPod connection recognition signal.
- The iPod adapter is possible to charge iPod®.

Audiopilot®

Audiopilot® is the sound improving system that picks up any noises and the sound of music coming into the vehicle by a microphone under the steering, and that the BOSE amp. revises the frequency feature of music at real time in response to the frequency feature of the noise while driving and listening to music.

- If low frequency area noise from vehicle is loud, it adjusts low frequency element of music to be bigger than vehicle noise.
- If high frequency area noise from vehicle is loud, it adjusts all frequency element of music to be bigger than vehicle noise.

Centerpoint® (with DVD player models)

CD and 2ch DVD stereo sound played at audio unit and DVD player are subjected to signal processing in BOSE amp. It can play the surround sound with presence.

DVD Mode (with DVD player models)

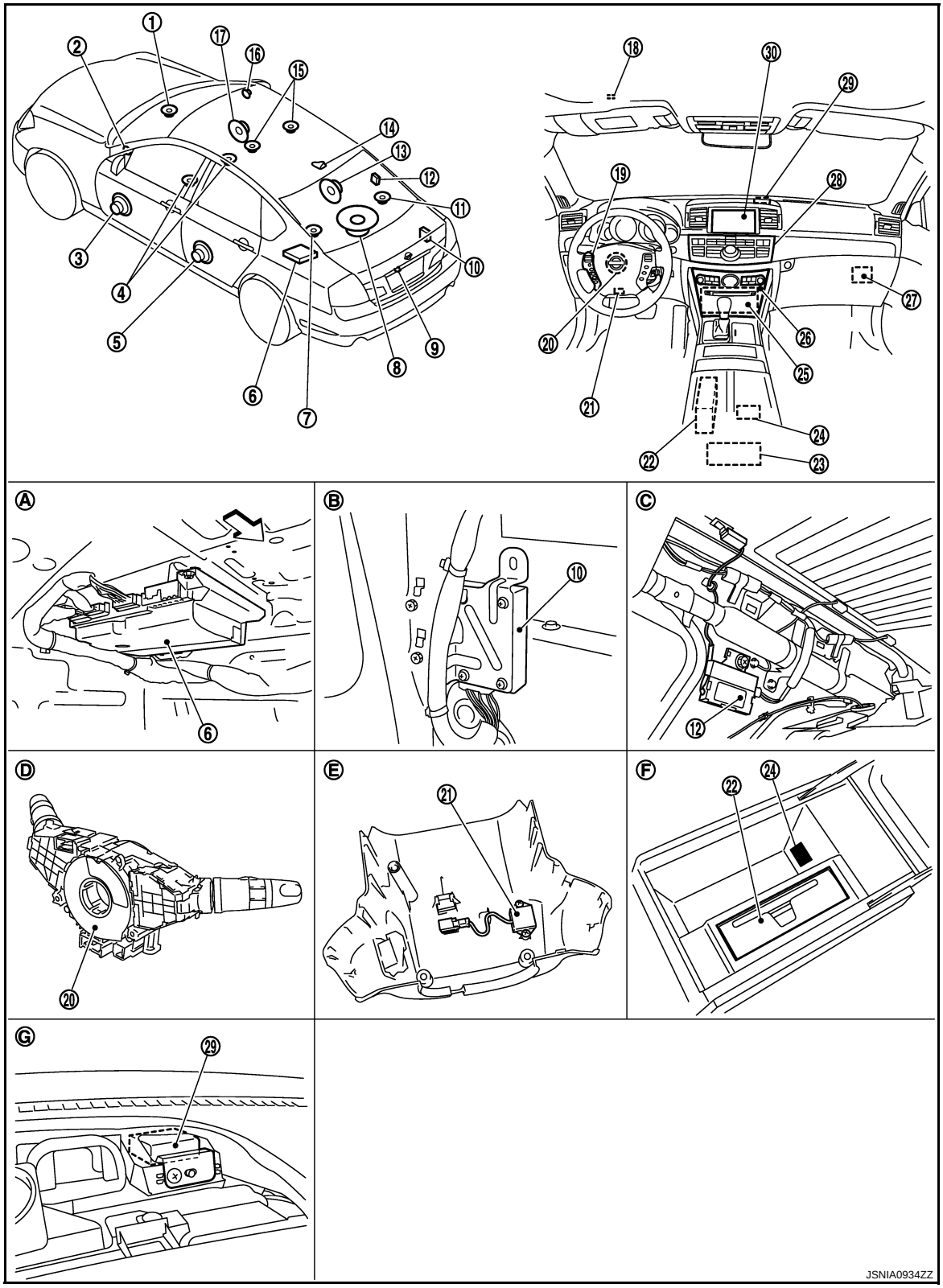
- The DVD player is connected to the AV control unit via AV communication and is controlled by the AV control unit.
- The DVD player sound signal is output to the BOSE amp. The BOSE amp. outputs it to each speaker.
- The DVD image signal is output to the front display unit.

AUX Mode

Refer to AV-20, "WITH NAVIGATION : System Description".

WITH NAVIGATION : Component Parts Location

INFOID:0000000004155628



1. Center speaker
2. Tweeter LH
3. Front door speaker LH
4. Driver seat speaker
5. Rear door speaker LH
6. BOSE amp.
7. Rear surround speaker LH
8. Woofer
9. Rear view camera
10. Camera control unit
11. Rear surround speaker RH
12. Antenna amp.

13. Rear door speaker RH
14. Satellite radio antenna
15. Passenger seat speaker
16. Tweeter RH
17. Front door speaker RH
18. Microphone
19. Steering switch
20. Steering angle sensor
21. Microphone (for AudioPilot®)
22. DVD player
23. Auxiliary input jacks
24. iPod connector
25. AV control unit
26. Preset switch
27. iPod adapter
28. Multifunction switch
29. GPS antenna
30. Front display unit
A. Under rear parcel LH side
B. Trunk side finisher (RH) is removed
C. Rear pillar finisher (RH) is removed
D. Spiral cable part
E. Steering column cover is removed
F. In center console
G. Center ventilator grille is removed
⇨: Vehicle front

WITH NAVIGATION : Component Description

INFOID:0000000004155629

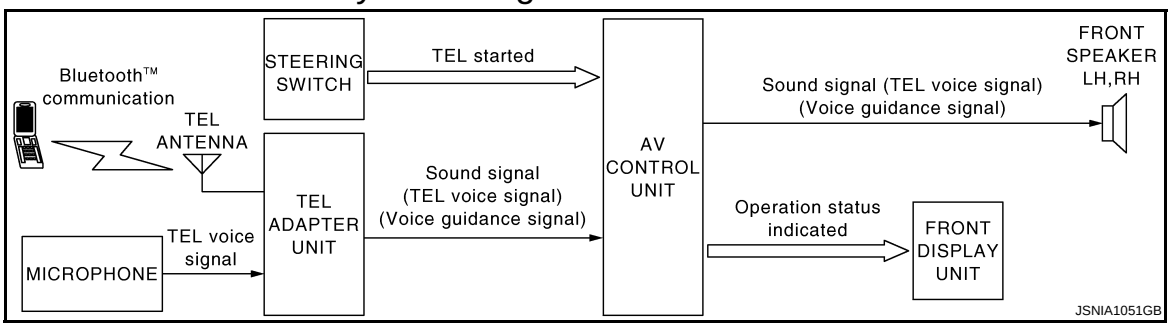
Part name	Description
AV CONTROL UNIT	• Receiving function of AM/FM/satellite radio, replaying function of CD, replaying/saving function of music box (HDD), replaying function of CF and voice recognition function are integrated. • It transmits the sound signal to the BOSE amp. with hard wire, and then transmits the control signals of AudioPilot® and Centerpoint® with AV communication.
FRONT DISPLAY UNIT	• Display image is controlled by the serial communication from AV control unit. • RGB image signal (audio operation condition) is input from AV control unit. • Touch panel function can be operated for each system by touching a display directly.
BOSE AMP.	• It is connected via AV communication and controlled by the AV control unit. • It receives the sound signal from AV control unit and output it to the each speaker. • It subjects to AudioPilot® processing when receiving sound signal from microphone for AudioPilot®.
	BOSE 2ch system (without DVD player models) • It amplifies the sound signal from the AV control unit and output it to each speaker.
	BOSE surround audio 5.1ch system (with DVD player models) • It amplifies the sound signal from the AV control unit and the DVD sound signal from DVD player, and then output them to each speaker. • It subjects to Centerpoint® processing.
WOOFER	• Outputs sound signal from BOSE amp. • Outputs low-pitched sound.
FRONT DOOR SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
TWEETER	• Outputs sound signal from BOSE amp. • Outputs high range sound.
REAR DOOR SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
CENTER SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
SEAT SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
REAR SURROUND SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
MULTIFUNCTION SWITCH	• Operation panel is equipped with the centralized switch where audio, auxiliary input and navigation operations are integrated. • The multifunction switch is connected via AV communication, and it transmits the operation signals of the multifunction switch and preset switch.

Part name	Description
PRESET SWITCH	• Operation panel is equipped with the centralized switch where audio and air conditioner operations are integrated. • The preset switch is connected to the multifunction switch by hard-wire, and it transmits the operation signal to the multifunction switch.
STEERING SWITCH	• Each audio operation can be operated. • Steering switch signal (operation signal) is output to AV control unit.
MICROPHONE	• Used for hands-free phone operation and voice recognition. • Mic signal is transmitted to AV control unit. • Power (Mic. VCC) is supplied from AV control unit.
ANTENNA AMP.	• Radio signal received by glass antenna is amplified and transmitted to AV control unit. • Power (antenna amp. ON signal) is supplied from AV control unit.
SATELLITE RADIO ANTENNA	Satellite radio wave is received and output to AV control unit.
iPod ADAPTER	• Inputs iPod sound signal from iPod®, and outputs iPod sound signal to AV control unit. • Receiving/transmitting of iPod® operation signals are performed as follows: - between AV control unit and iPod adapter: AV communication. - between iPod® and iPod adapter: serial communication.
DVD PLAYER	• It transmits the playback DVD image signal and the input AUX image signal to the front display unit. It also transmits the input AUX sound signal to the AV control unit. • It transmits the playback DVD sound signal to the BOSE amp.
MICROPHONE (for AudioPilot®)	• Used for AudioPilot®. • Mic signal is transmitted to BOSE amp.

HANDS-FREE PHONE SYSTEM
WITHOUT NAVIGATION

WITHOUT NAVIGATION : System Diagram

INFOID:0000000004155630



WITHOUT NAVIGATION : System Description

INFOID:0000000004155631

- TEL adapter unit is controlled with AV communication from AV control unit.
- The connection between portable telephone and TEL adapter unit is performed with Bluetooth™ communication.
- The voice guidance signal is input from the TEL adapter unit to the AV control unit and output to the front speaker when operating the cellular phone.
- TEL adapter unit has the on board self-diagnosis function. Refer to AV-76, "Diagnosis Description".

WHEN RECEIVING A CALL

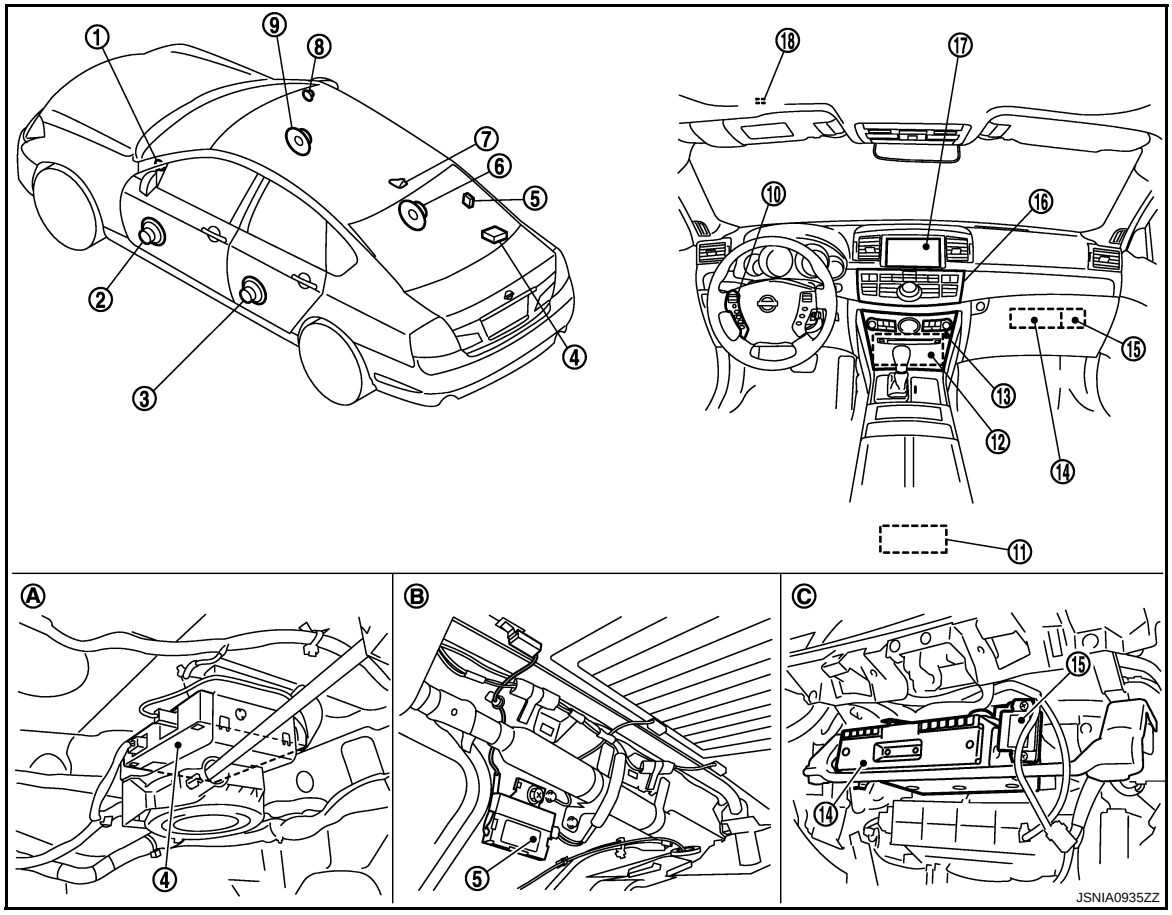
TEL voice signal received with the portable telephone is input from TEL antenna via TEL adapter unit to AV control unit with Bluetooth™ communication and output to the front speaker. The operation is performed with the steering switch or voice recognition function (TEL operation only).

WHEN A CALL IS TRANSMITTED

Speech sound (TEL voice signal) is input from the microphone to the TEL adapter unit. It is input from the TEL antenna via Bluetooth™ communication to the portable telephone. It is transmitted to the phone on the other side. The operation is performed with the steering switch or voice recognition function (TEL operation only).

WITHOUT NAVIGATION : Component Parts Location

INFOID:0000000004155632



1. Tweeter LH
2. Front door speaker LH
3. Rear door speaker
4. Satellite radio tuner
5. Antenna amp.
6. Rear door speaker RH
7. Satellite radio antenna
8. Tweeter RH
9. Front door speaker RH
10. Steering switch
11. Auxiliary input jacks
12. AV control unit
13. Preset switch
14. TEL adapter unit
15. TEL antenna
16. Multifunction switch
17. Front display unit
18. Microphone

A. Under rear parcel RH side
B. Rear pillar finisher (RH) is removed
C. Glove box cover is removed

WITHOUT NAVIGATION : Component Description

INFOID:0000000004155633

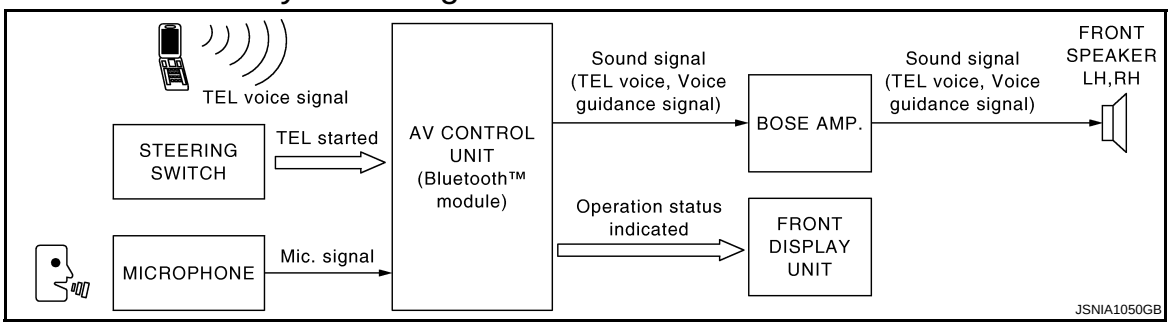
Part name	Description
AV CONTROL UNIT	• Inputs TEL voice signal or voice guidance signal from TEL adapter unit and outputs it to each speaker during reception. • Connects with TEL adapter unit and AV communication and controls hands-free phone system.
FRONT DISPLAY UNIT	• Display image is controlled by the serial communication from AV control unit. • Inputs RGB image signal (RGB, RGB area and RGB synchronizing) from AV control unit and displays the status of hands-free phone system.
BOSE AMP.	Inputs TEL voice signal or voice guidance signal from AV control unit and outputs it to front door speaker.
FRONT DOOR SPEAKER	Outputs the TEL voice signal or voice guidance signal from AV control unit.
PRESET SWITCH	• Adjust the sound when using hands-free phone system. • The operation signal is transmitted to the AV control unit via AV communication.

Part name	Description
STEERING SWITCH	• The hands-free phone system can be operated. • Steering switch signal (operation signal) is output to AV control unit.
MICROPHONE	• Uses when operating the hands-free phone. • Outputs Mic. signal (TEL voice signal) to the TEL adapter unit. • The power (Mic. power supply) is supplied from the TEL adapter unit.
TEL ADAPTER UNIT	• Receives the steering switch signal (operation signal) from the steering switch. • Inputs the TEL voice signal from TEL antenna during reception and outputs it to the AV control unit. • Inputs the TEL voice signal from microphone during speech recognition and outputs it to the TEL antenna. • Controlled by AV communication transmitted from AV control unit.
TEL ANTENNA	Connects with the portable telephone via Bluetooth™ communication and communicates the TEL voice signal.

WITH NAVIGATION

WITH NAVIGATION : System Diagram

INFOID:0000000004155634



WITH NAVIGATION : System Description

INFOID:0000000004155635

- AV control unit includes hands-free phone function.
- Hands-free communication can be operated by connecting using Bluetooth™ communication with cellular phone.
- Operation is performed by steering switch, and operating condition is indicated on front display.
- Guide sound that is heard during operation is input from AV control unit to BOSE amp., and is output from front speaker.

WHEN A CALL IS ORIGINATED

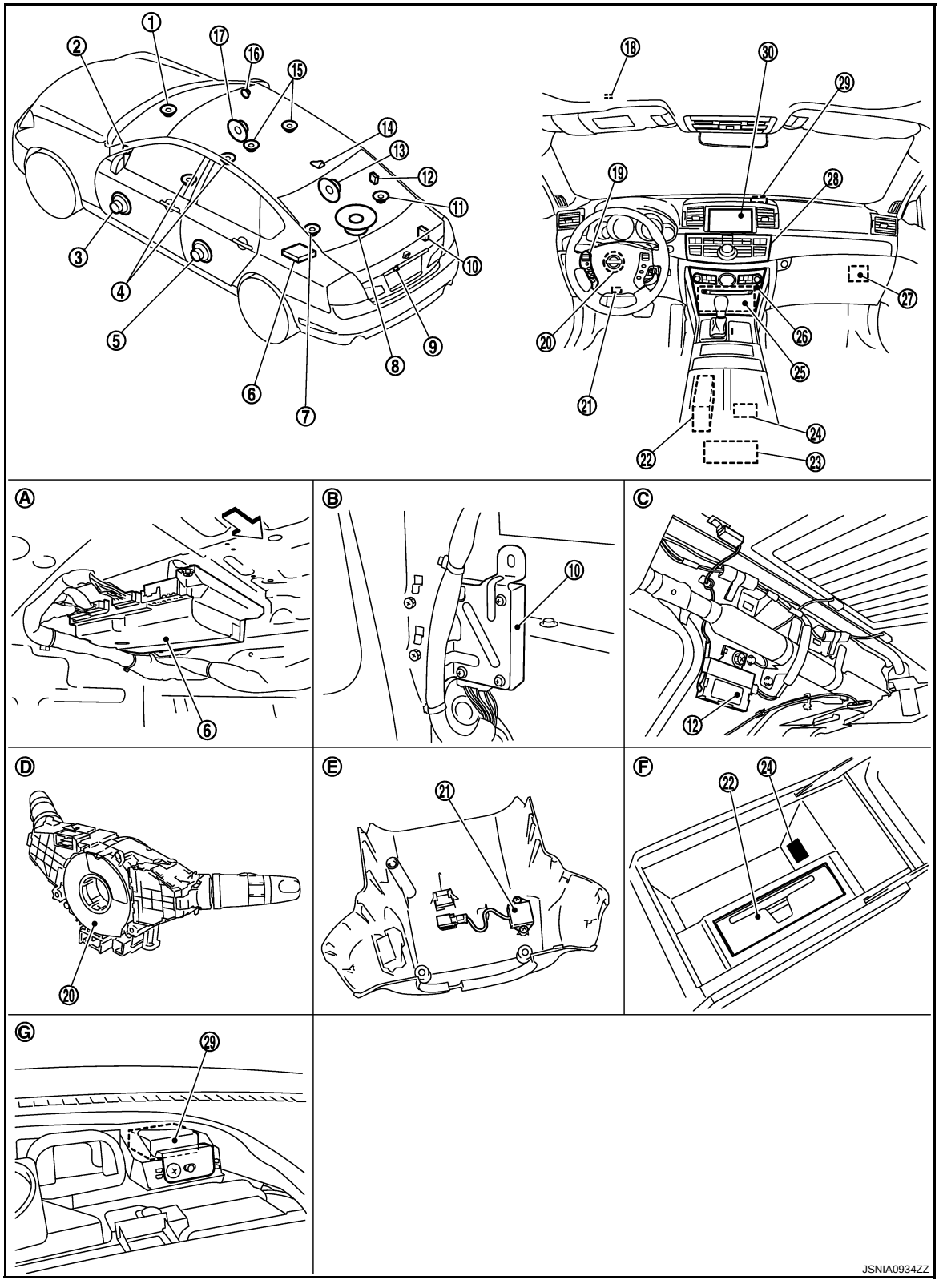
Spoken voice sound output from the microphone (MIC. signal) is input to AV control unit. AV control unit outputs to cellular phone with Bluetooth™ communication as a TEL voice signal. Voice sound is then heard at the other party.

WHEN RECEIVING A CALL

Voice sound is input to own cellular phone from the other party. TEL voice signal is output to front speaker, and the signal is input to BOSE amp. via AV control unit by establishing Bluetooth™ communication from cellular phone.

WITH NAVIGATION : Component Parts Location

INFOID:0000000004155636



1. Center speaker
2. Tweeter LH
3. Front door speaker LH
4. Driver seat speaker
5. Rear door speaker LH
6. BOSE amp.
7. Rear surround speaker LH
8. Woofer
9. Rear view camera
10. Camera control unit
11. Rear surround speaker RH
12. Antenna amp.

13. Rear door speaker RH
14. Satellite radio antenna
15. Passenger seat speaker
16. Tweeter RH
17. Front door speaker RH
18. Microphone
19. Steering switch
20. Steering angle sensor
21. Microphone (for AudioPilot®)
22. DVD player
23. Auxiliary input jacks
24. iPod connector
25. AV control unit
26. Preset switch
27. iPod adapter
28. Multifunction switch
29. GPS antenna
30. Front display unit

A. Under rear parcel LH side
B. Trunk side finisher (RH) is removed
C. Rear pillar finisher (RH) is removed
D. Spiral cable part
E. Steering column cover is removed
F. In center console
G. Center ventilator grille is removed

⇨: Vehicle front

WITH NAVIGATION : Component Description

INFOID:0000000004155637

Part name	Description
AV CONTROL UNIT	• It includes the TEL adapter and Bluetooth™ function. • It outputs the TEL voice signal and voice guidance sound signal to the BOSE amp.
FRONT DISPLAY UNIT	• Display image is controlled by the serial communication from AV control unit. • Inputs RGB image signal (RGB, RGB area and RGB synchronizing) from AV control unit and displays the status of hands free phone system.
BOSE AMP.	Inputs TEL voice signal or voice guidance signal from AV control unit and outputs it to front speaker.
FRONT DOOR SPEAKER	Outputs the TEL voice signal or voice guidance signal from BOSE amp.
PRESET SWITCH	• Adjust the sound when using TEL. • The operation signal is transmitted to the AV control unit via AV communication.
STEERING SWITCH	• The hands free-phone system can be operated. • Steering switch signal (operation signal) is output to AV control unit.
MICROPHONE	• Uses when operating the hands-free phone. • Outputs Mic. signal (TEL voice signal) to the AV control unit. • The power (Mic. power supply) is supplied from the AV control unit.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)
WITHOUT NAVIGATION

WITHOUT NAVIGATION : Diagnosis Description

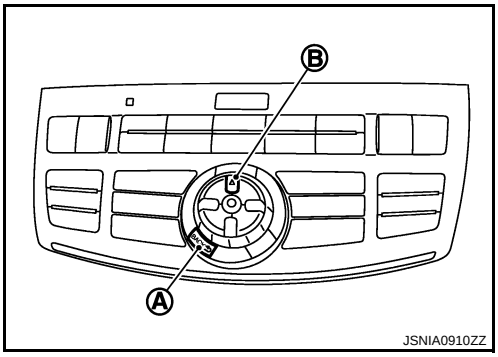
INFOID:0000000004155638

MULTIFUNCTION SWITCH AND PRESET SWITCH SELF-DIAGNOSIS FUNCTION

The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

Self-Diagnosis Mode

- Press the “BACK (A)” switch and the “▲ (B)” switch of the 8-direction switches within 10 seconds after turning the ignition switch from OFF to ACC and hold them for 3 seconds or more. Then the buzzer sounds, all indicators of the preset switch illuminate, and the self-diagnosis mode starts.
- The continuity of each switch at the ON position can be checked by pressing the switch. The buzzer sounds if the switch is normal.
  NOTE:
  The hazard switch and CD eject switch cannot be checked.



Finishing Self-Diagnosis Mode

Self-diagnosis mode is canceled when turning the ignition switch OFF.

MULTI AV SYSTEM ON BOARD DIAGNOSIS FUNCTION

- The AV control unit diagnosis function starts up with multifunction switch operation and the AV control unit performs a diagnosis for each unit in the system during the on board diagnosis.
- Perform a CONSULT-III diagnosis if the on board diagnosis does not start, e.g., the screen does not display anything, the multifunction switch does not function, etc.

ON BOARD DIAGNOSIS

Description

- The trouble diagnosis function has a self-diagnosis mode for conducting trouble diagnosis automatically and a confirmation/adjustment mode for operating manually.
- Self-diagnosis mode performs the AV control unit diagnosis and the connection diagnosis between each of the units that make up the system, and it indicates the results to the display.
- The confirmation/adjustment mode allows the technician to check, modify or adjust the vehicle signals and set values, as well as to monitor the system error records and system communication status. The checking, modifying or adjusting actions generally require human intervention and judgment (the system cannot make judgment automatically).

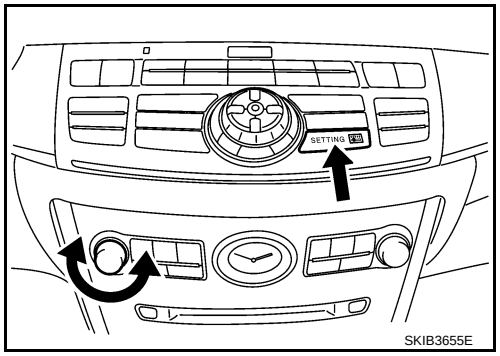
On Board Diagnosis Item

Mode	Description
Self-Diagnosis	• AV control unit diagnosis. • Perform the connection diagnosis between each of the units.

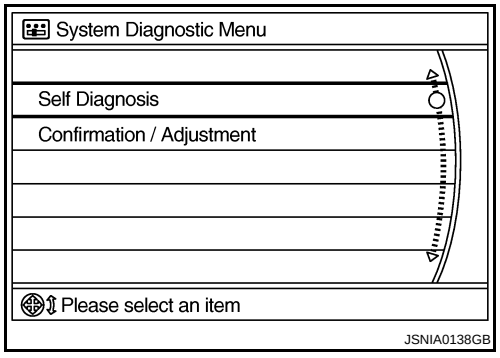
Mode		Description
Confirmation/ Adjustment	Display Diagnosis	The confirmations of the tint with the color spectrum bar display and shading of color with the gradation bar display can be performed.
	Vehicle Signals	Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition switch, and reverse.
	Speaker Test	The connection of a speaker can be confirmed by test tone.
	Climate Control	Start auto air conditioner system self-diagnosis.
	Error History	The system malfunction and the frequency when occurring in the past are displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.
	Vehicle CAN Diagnosis	The transmitting/receiving of CAN communication can be monitored.
	AV COMM Diagnosis	The communication condition of each unit of Multi AV system can be monitored.
	Delete Unit Connection Log	Erase the connection history of unit and error history.
	Initialize Settings	Initializes the AV control unit memory.

STARTING PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “SETTING” button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   • Shifting from current screen to previous screen is performed by pressing “BACK” button.



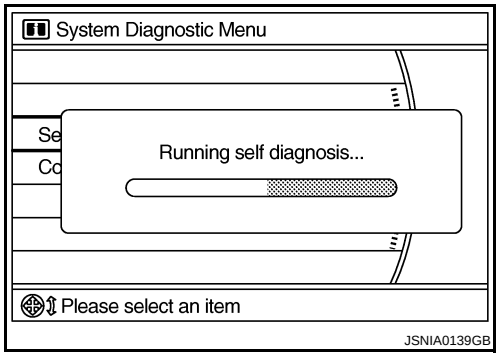
4. The trouble diagnosis initial screen is displayed, and then the items of “Self Diagnosis” and “Confirmation/Adjustment” can be selected.



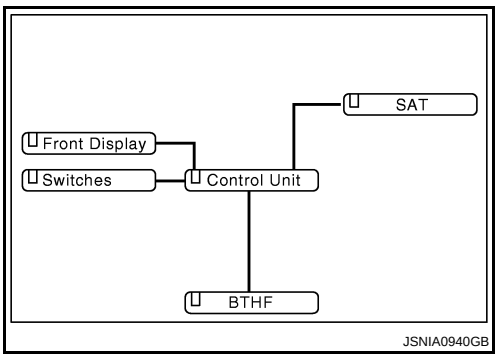
SELF-DIAGNOSIS MODE

1. Start the self-diagnosis function and select “Self-diagnosis”.

- Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
- The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.



2. Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.

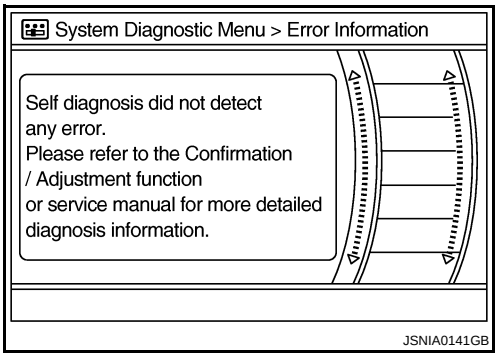


Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction Note	Red	Green

NOTE:

- Only the control unit (AV control unit) is displayed in red.
- Replace AV control unit if “Self-Diagnosis did not run because of a control unit malfunction” is indicated. The symptom is AV control unit internal error.

- If multiple errors occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > gray.
- The comments of the self-diagnosis results can be viewed with a component in the diagnosis result screen.



SELF-DIAGNOSIS RESULTS

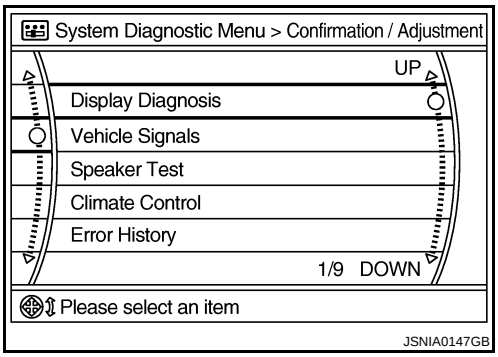
Check the applicable display at the following table, and then repair the malfunctioning parts.

Diagnosis results	Detection logic	Possible malfunction location / Action to take
Control Unit • unit: red **NOTE:** When a control unit malfunction is detected (red in unit display), connection malfunctions with other connection unit may be displayed.	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detectiong no malfunction in those components, replace AV control unit.
“Self-Diagnosis did not run because of a control unit malfunction”		
Front Display • unit: gray • connection line: yellow	When either one of the following items is detected: • serial communication circuits between AV control unit and front display unit are malfunctioning. • serial communication signal between AV control unit and front display unit is malfunctioning.	Serial communication circuits between AV control unit and front display unit.

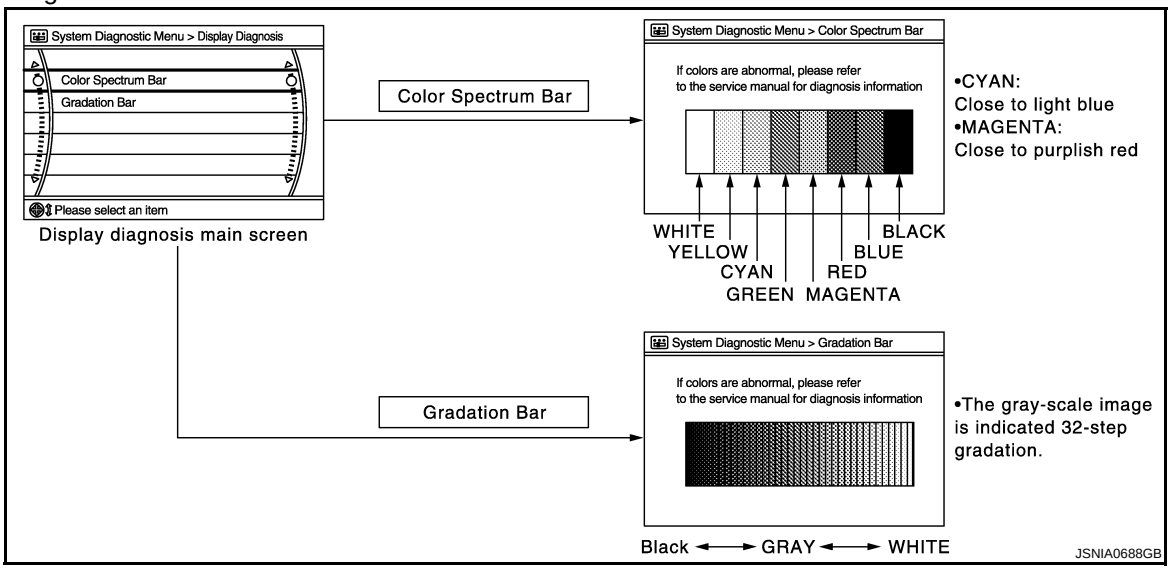
Diagnosis results	Detection logic	Possible malfunction location / Action to take
SAT • unit: gray • connection line: yellow	When either one of the following items is detected: • satellite radio tuner power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and satellite radio tuner are malfunctioning. • serial communication or request signal between AV control unit and satellite radio tuner is malfunctioning. • request signal circuit between AV control unit and satellite radio tuner is malfunctioning.	• Satellite radio tuner power supply and ground circuits. • Serial communication circuits between AV control unit and satellite radio tuner. • Request signal circuit between AV control unit and satellite radio tuner.
BTHF • unit: gray • connection line: yellow	When either one of the following items is detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between multifunction switch and TEL adapter unit are malfunctioning. • AV communication signal between AV control unit and TEL adapter unit is malfunctioning.	• TEL adapter unit power supply and ground circuits. • AV communication circuits between multifunction switch and TEL adapter unit.

CONFIRMATION/ADJUSTMENT MODE

1. Start the diagnosis function and select “Confirmation/Adjustment”. The confirmation/adjustment mode indicates where each item can be checked or adjusted.
2. Select each switch on the “Inspection & Adjustment Mode” screen to display the relevant trouble diagnosis screen. Press the “RETURN” switch to return to the initial Inspection & Adjustment Mode screen.



Display Diagnosis

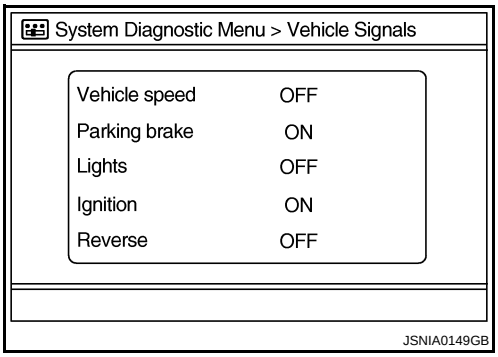


The tint of the color bar indication is as per the following list if RGB signal error is detected.

R (red) signal error : Light blue (Cyan) tint
G (green) signal error : Purple (Magenta) tint
B (blue) signal error : Yellow tint

Vehicle Signals

A comparison check can be made of each actual vehicle signal and the signals recognized by the system.



Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Parking brake	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Lights	ON	Light switch ON.	—
	OFF	Light switch OFF.	
Ignition	ON	Ignition switch ON.	—
	OFF	Ignition switch in ACC position.	
Reverse	ON	Shift the selector lever to “R” position.	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever other than “R” position.	

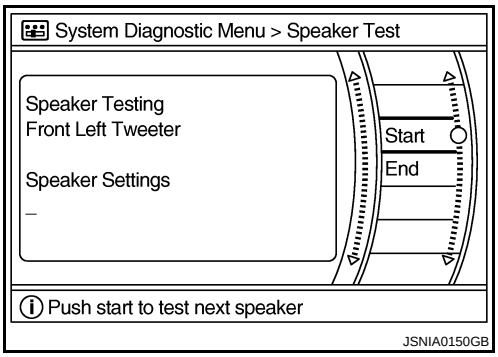
Speaker Test

Select “SPEAKER DIAGNOSIS” to display the Speaker Diagnosis screen. Press “START and NEXT” to generate a test tone in a speaker. Press “Start” to generate a test tone in the next speaker. Press “End” to stop the test tones.

NOTE:

The frequency of test tone emitted from each speaker is as follows.

Front Tweeter : 3 kHz
Front speaker : 300 Hz
Rear speaker : 1 kHz



Climate Control

Refer to “HEATER & AIR CONDITIONING CONTROL SYSTEM” for details.

Error History

The self-diagnosis results are judged depending on whether any error occurs from when “Self-diagnosis” is selected until the self-diagnosis results are displayed.

However, the diagnosis results are judged normal if an error has occurred before the ignition SW is turned ON and then no error has occurred until the self-diagnosis start. Check the “Error Record” to detect any error that may have occurred before the self-diagnosis start because of this situation.

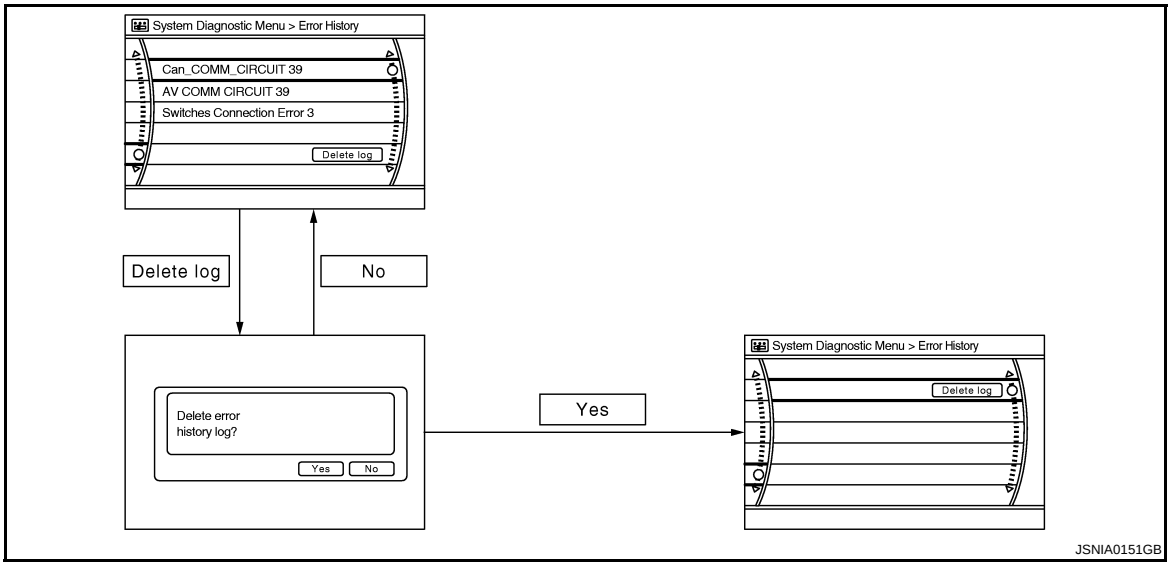
Count up method A

- The counter resets to 0 if an error occurs when IGN switch is turned ON. The counter increases by 1 if the condition is normal at a next IGN ON cycle.
- The counter upper limit is 39. Any counts exceeding 39 are ignored. The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Count up method B

- The counter increases by 1 if an error occurs when IGN switch is ON. The counter will not decrease even if the condition is normal at the next IGN ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Display type of occurrence frequency	Error history display item
Count up method A	CAN communication line, control unit (CAN), AV communication line, control unit (AV communication)
Count up method B	Other than the above



Error item

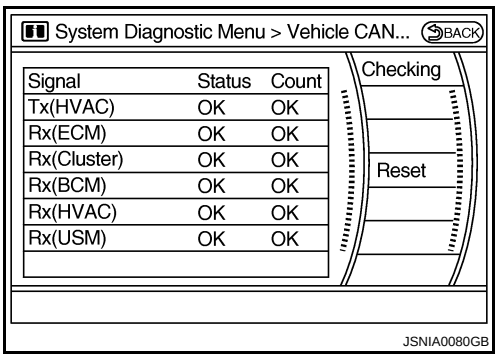
Some error items may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items

Error item	Detection logic	Possible malfunction factor/Action to take
CAN COMM CIRCUIT	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-78, "Diagnosis Procedure".
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Replace the AV control unit.
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit	AV control unit malfunction is detected.	
CAN Controller Memory Error		
Front Display Connection Error	When either one of the following items is detected: • front display unit power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and front display unit are malfunctioning. • serial communication signal between AV control unit and front display unit is malfunctioning.	• Front display unit power supply and ground circuits. • Serial communication circuits between AV control unit and front display unit.

Error item	Detection logic	Possible malfunction factor/Action to take
SAT Connection Error	When either one of the following items is detected: • satellite radio tuner power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and satellite radio tuner are malfunctioning. • serial communication or request signal between AV control unit and satellite radio tuner is malfunctioning. • request signal circuit between AV control unit and satellite radio tuner is malfunctioning.	• Satellite radio tuner power supply and ground circuits. • Serial communication circuits between AV control unit and satellite radio tuner. • Request signal circuit between AV control unit and satellite radio tuner.
• AV COMM CIRCUIT • Switches Connection Error	When either one of the following items is detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and multifunction switch is malfunctioning.	Multifunction switch power supply and ground circuits.
• AV COMM CIRCUIT • H/F Unit Connection Error	When either one of the following items is detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between multifunction switch and TEL adapter unit are malfunctioning. • AV communication signal between AV control unit and TEL adapter unit is malfunctioning.	• TEL adapter unit power supply and ground circuits. • AV communication circuit between multifunction switch and TEL adapter unit.
• AV COMM CIRCUIT • Switches Connection Error • H/F Unit Connection Error	Malfunction is detected in AV communication circuits between AV control unit and multifunction switch.	• AV communication circuits between AV control unit and multifunction switch. • Check and repair the short circuit in AV communication circuits.

Vehicle CAN Diagnosis

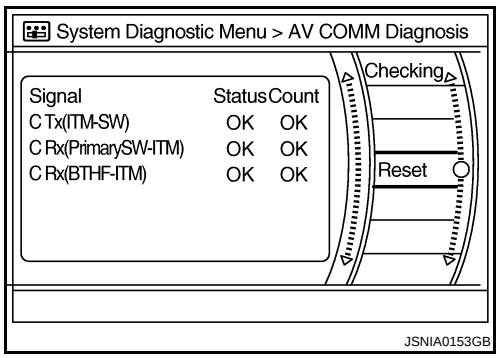
- CAN communication status and error counter is displayed.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if reset.



Items	Display (Current)	Malfunction counter (Past)
Tx (HVAC)	OK / UNKWN	OK / 0 – 39
Rx (ECM)	OK / UNKWN	OK / 0 – 39
Rx (Cluster)	OK / UNKWN	OK / 0 – 39
Rx (BCM)	OK / UNKWN	OK / 0 – 39
Rx (HVAC)	OK / UNKWN	OK / 0 – 39
Rx (USM)	OK / UNKWN	OK / 0 – 39
Rx (TPMS)	OK / UNKWN	OK / 0 – 39

AV COMM Diagnosis

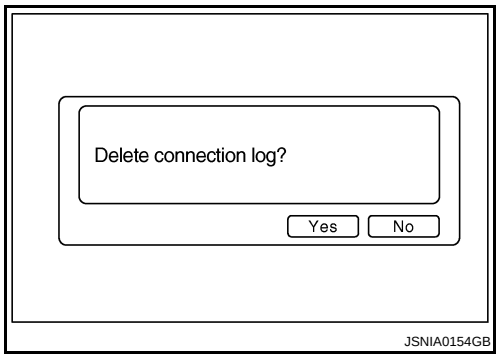
- Displays the communication status between AV control unit (master unit) and each unit.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- If it resets, the error counter is erased.



Items	Status (Current)	Counter (Past)
C Tx (ITM–SW)	OK / UNKWN	OK / 0 - 39
C Rx (PrimarySW–ITM)	OK / UNKWN	OK / 0 - 39
C Rx (BTHF–ITM)	OK / UNKWN	OK / 0 - 39

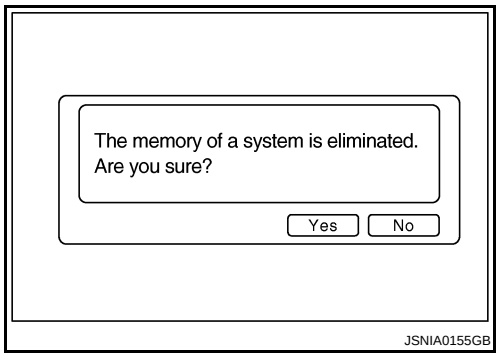
Delete Unit Connection Log

Deletes any unit connection records and error records from the AV control unit memory. (Clear the records of the unit that has been removed)



Initialize Settings

Initializes the AV control unit memory.



WITHOUT NAVIGATION : CONSULT-III Function (MULTI AV)

INFOID:0000000004155639

CONSULT-III FUNCTIONS

CONSULT-III performs the following functions via the communication with the AV control unit.

Diagnosis mode	Description
Ecu Identification	The part number of AV control unit can be checked.
Self Diagnostic Result	Performs a diagnosis on the AV control unit and a connection diagnosis for the communication circuit of the Multi AV system, and displays the current and past malfunctions collectively.
Data Monitor	The diagnosis of vehicle signal that is input to the AV control unit can be performed.

AV COMMUNICATION

When “AV communication” of “CAN Diag Support Monitor” is selected, the following function will be performed.

AV communication	AV&NAVI C/U	Displays the communication status from AV control unit to each unit as well as the error counter.
	AUDIO	Displays the AV control unit communication status and the error counter.

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSIS RESULT

- In CONSULT-III self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates “CRNT”. The past malfunction indicates “PAST”.
- The timing is displayed as “0” if any of the error codes [U1000], [U1010], [U1300] and [U1310] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

Self-Diagnosis Results Display Item

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-78, "Diagnosis Procedure".
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit.
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	
Control Unit FLASH-ROM [U1200]	AV control unit malfunction is detected.	
CAN CONT [U1216]		
FRONT DISP CONN [U1243]	When either one of the following items is detected: • front display unit power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and front display unit are malfunctioning. • serial communication signal between AV control unit and front display unit is malfunctioning.	• Front display unit power supply and ground circuits. • Serial communication circuits between AV control unit and front display unit.
SAT CONN [U1255]	When either one of the following items is detected: • satellite radio tuner power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and satellite radio tuner are malfunctioning. • serial communication or request signal between AV control unit and satellite radio tuner is malfunctioning. • request signal circuit between AV control unit and satellite radio tuner is malfunctioning.	• Satellite radio tuner power supply and ground circuits. • Serial communication circuits between AV control unit and satellite radio tuner. • Request signal circuit between AV control unit and satellite radio tuner.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items is detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and multifunction switch is malfunctioning.	Multifunction switch power supply and ground circuits.

Error item	Description	Possible malfunction factor/Action to take
• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	When either one of the following items is detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between multifunction switch and TEL adapter unit are malfunctioning. • AV communication signal between AV control unit and TEL adapter unit is malfunctioning.	• TEL adapter unit power supply and ground circuits. • AV communication circuit between multifunction switch and TEL adapter unit.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • HAND FREE CONN [U1256]	Malfunction is detected in AV communication circuits.	• AV communication circuits between AV control unit and multifunction switch. • Check and repair the short circuit in AV communication circuits.

DATA MONITOR

ALL SIGNALS
- Displays the status of the following vehicle signals inputted into the AV control unit.
- For each signal, actual signal can be compared with the condition recognized on the system.

Display Item	Display	Vehicle status	Remarks
VHCL SPD SIG	On	Vehicle speed >0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed =0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	
	Off	Parking brake is released.	
ILLUM SIG	On	Block the light beam from the auto light optical sensor when the light SW is ON.	—
	Off	Expose the auto light optical sensor to light when the light SW is OFF or ON.	
IGN SIG	On	Ignition switch ON.	
	Off	Ignition switch in ACC position.	
REV SIG	On	Selector lever in R position.	Changes in indication may be delayed. This is normal.
	Off	Selector lever in any position other than R.	

SELECTION FROM MENU
Allows the technician to select which vehicle signals should be displayed and displays the status of the selected vehicle signals.

Item to be selected	Description
VHCL SPD SIG	The same as when “ALL SIGNALS” is selected.
PKB SIG	
ILLUM SIG	
IGN SIG	
REV SIG	

WITH NAVIGATION

WITH NAVIGATION : Diagnosis Description

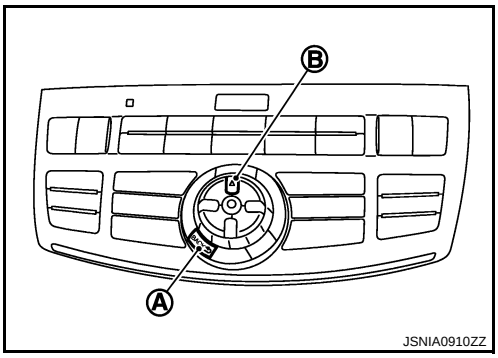
INFOID:0000000004155640

MULTIFUNCTION SWITCH AND PRESET SWITCH SELF-DIAGNOSIS FUNCTION

The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

Self-Diagnosis Mode

- Press the “BACK (A)” switch and the “▲ (B)” switch of the 8-direction switches within 10 seconds after turning the ignition switch from OFF to ACC and hold them for 3 seconds or more. Then the buzzer sounds, all indicators of the preset switch illuminate, and the self-diagnosis mode starts.
- The continuity of each switch at the ON position can be checked by pressing the switch. The buzzer sounds if the switch is normal.
  NOTE:
  The hazard switch and CD eject switch cannot be checked.



Finishing Self-Diagnosis Mode

Self-diagnosis mode is canceled when turning the ignition switch OFF.

MULTI AV SYSTEM ON BOARD DIAGNOSIS FUNCTION

- The AV control unit diagnosis function starts up with multifunction switch operation and the AV control unit performs a diagnosis for each unit in the system during the on board diagnosis.
- Perform a CONSULT-III diagnosis if the on board diagnosis does not start, e.g., the screen does not display anything, the multifunction switch does not function, etc.

ON BOARD DIAGNOSIS

Description

- The trouble diagnosis function has a self-diagnosis mode for conducting trouble diagnosis automatically and a confirmation/adjustment mode for operating manually.
- The self-diagnosis mode performs diagnoses on the AV control unit, connections between system components as well as connections between AV control unit and GPS antenna and between AV control unit and satellite radio antenna. Then it displays the diagnosis results on the display.
- The confirmation/adjustment mode allows the technician to check, modify or adjust the vehicle signals and set values, as well as to monitor the system error records and system communication status. The checking, modifying or adjusting generally require human intervention and judgment (the system cannot make judgment automatically).

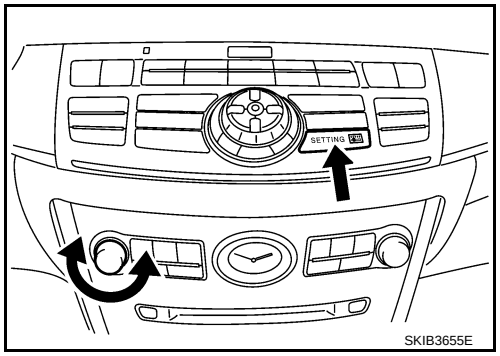
On board diagnosis item

Mode	Description
Self-Diagnosis	• AV control unit diagnosis. • Diagnoses the connections across system components, between AV control unit and GPS antenna and between AV control unit and satellite radio antenna.

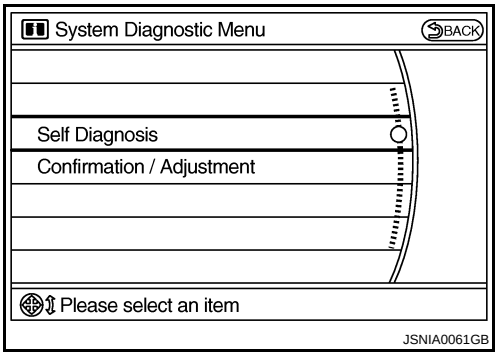
Mode			Description
Confirmation/ Adjustment	Display Diagnosis		The following check functions are available: color tone check by color bar display, light and shade check by gray scale display and touch panel calibration response check.
	Vehicle Signals		Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition switch, and reverse.
	Speaker Test		The connection of a speaker can be confirmed by test tone.
	Climate Control		Start auto air conditioner system self-diagnosis.
	Navigation	Steering Angle Adjustment	When there is a difference between the actual turning angle and the vehicle mark turning angle, it can be adjusted.
		Speed Calibration	When there is a difference between the current location mark and the actual location, it can be adjusted.
		XM SAT Subscription Status	The XM NavTraffic subscription status can be checked.
	Error History		The system malfunction and the frequency when occurring in the past are displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.
	Vehicle CAN Diagnosis		The transmitting/receiving of CAN communication can be monitored.
	AV COMM Diagnosis		The communication condition of each unit of Multi AV system can be monitored.
	Handsfree Phone		The received volume adjustment of hands-free phone, microphone speaker check, and erase memory can be performed.
	Camera Cont.		The signal connected to camera control unit can be checked and the guiding line position that overlaps rear view camera image can be adjusted.
	Bluetooth		The passkey and the device name can be checked and changed.
	SAT	Change Channel	Any necessary channels required to receive traffic information from the satellite radio system can be set.
		Change Application ID	Any application ID's required to receive traffic information from the satellite radio system can be set.
		Diag	Not used.
	Delete Unit Connection Log		Erase the connection history of unit and error history.
	Initialize Settings		Initializes the AV control unit memory.

STARTING PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “SETTING” button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   - Shifting from current screen to previous screen is performed by pressing “BACK” button.



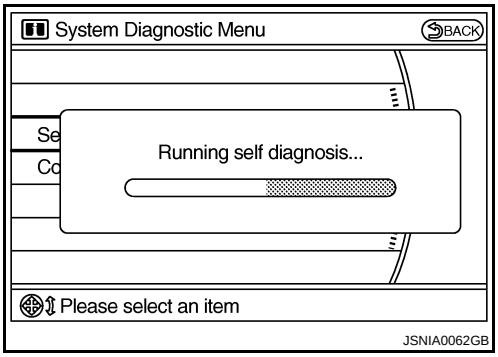
4. The trouble diagnosis initial screen is displayed, and then the items of “Self Diagnosis” and “Confirmation/Adjustment” can be selected.



SELF-DIAGNOSIS MODE

1. Start the self-diagnosis function and select “Self Diagnosis”.

- Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
- The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.



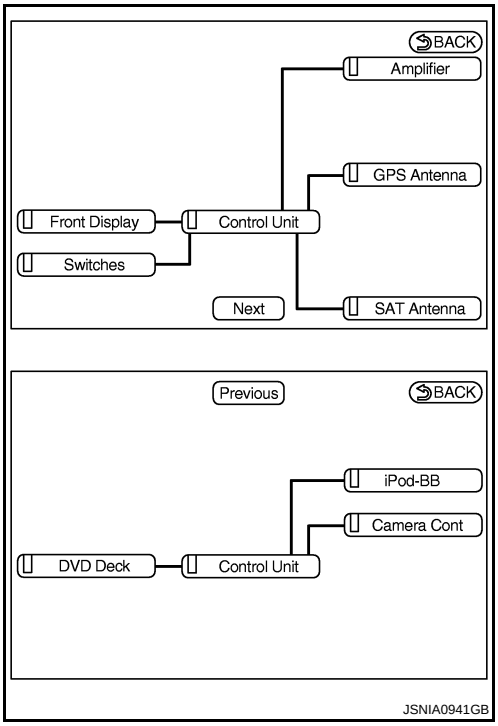
2. Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.

Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction [Note]	Red	Green

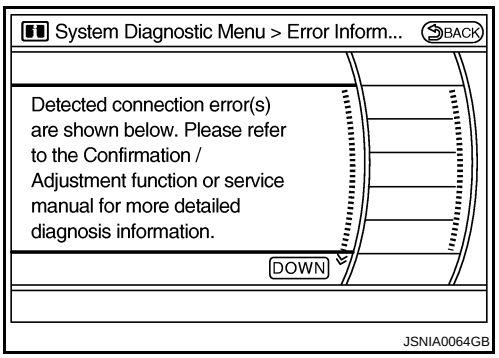
NOTE:

- Only the control unit (AV control unit) is displayed in red.
- Replace AV control unit if “Self-Diagnosis did not run because of a control unit malfunction” is indicated. The symptom is AV control unit internal error. Refer to AV-482, "Exploded View".

- If multiple errors occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > gray.



- The comments of the self-diagnosis results can be viewed with a component in the diagnosis result screen.



SELF-DIAGNOSIS RESULTS

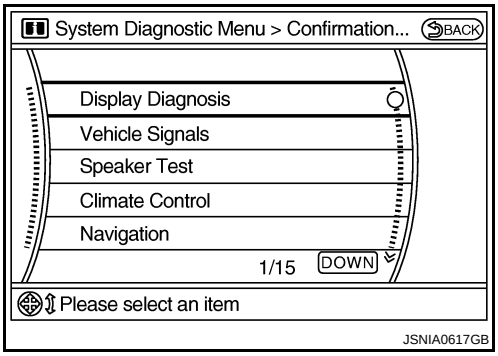
Check the applicable display at the following table, and then repair the malfunctioning parts.

Diagnosis results	Detection logic	Possible malfunction location / Action to take
Control unit • unit: red **NOTE:** When a control unit malfunction is detected (red in unit display), connection malfunctions with other connection unit may be displayed.	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.
"Self-Diagnosis did not run because of a control unit malfunction"		
Front Display • unit: gray • connection line: yellow	When either one of the following items is detected: • serial communication circuits between AV control unit and front display unit are malfunctioning. • serial communication signal between AV control unit and front display unit is malfunctioning.	Serial communication circuits between AV control unit and front display unit.
DVD Deck • unit: gray • connection line: yellow	When either one of the following items is detected: • DVD player power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and DVD player is malfunctioning.	DVD player power supply and ground circuits.
Amplifier • unit: gray • connection line: yellow	When either one of the following items is detected: • BOSE amp. power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and BOSE amp. is malfunctioning.	BOSE amp. power supply and ground circuits.
Camera Cont. • unit: gray • connection line: yellow	Malfunction is detected in Camera-connection recognition signal circuit.	Camera-connection recognition signal circuit.

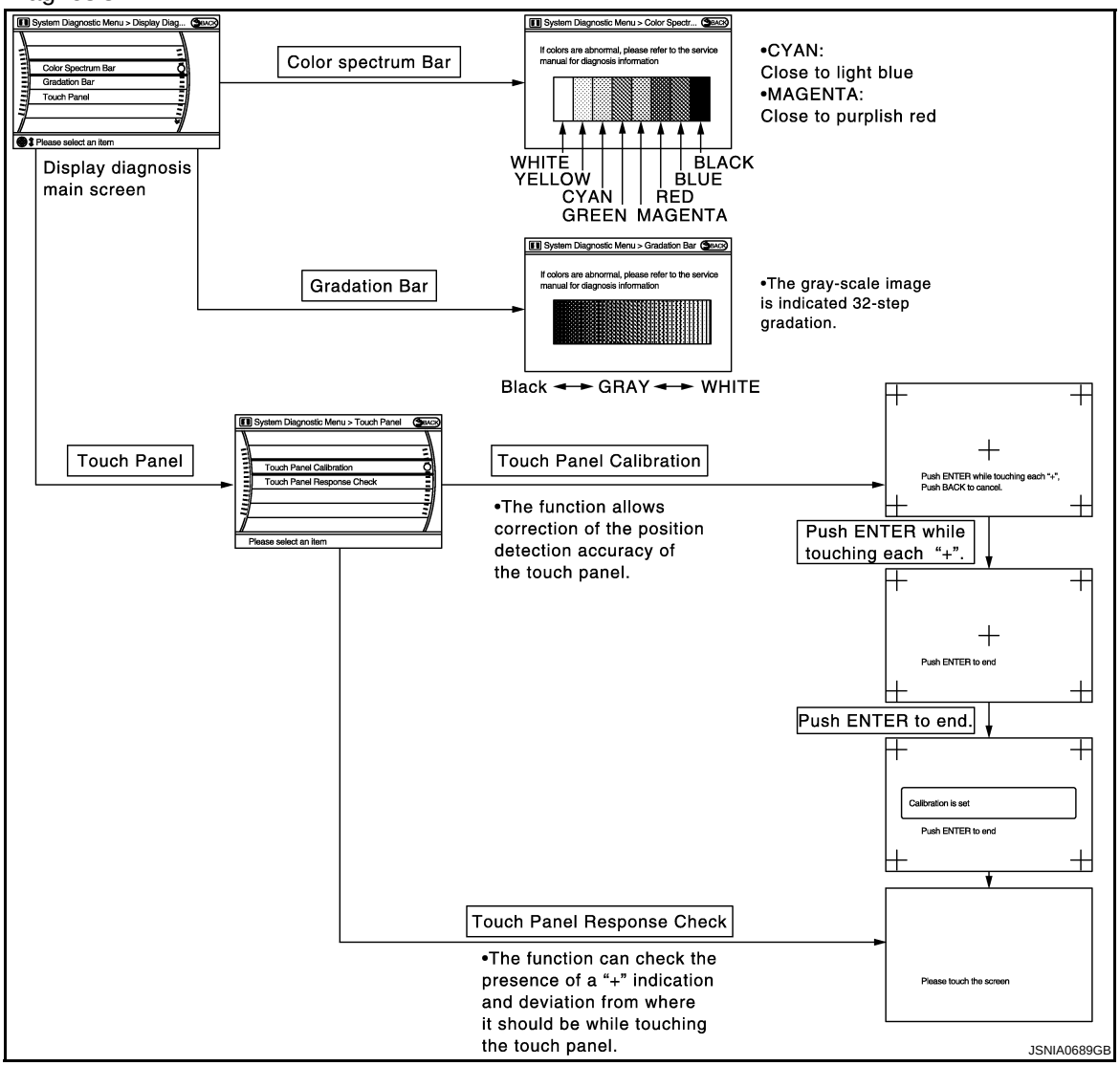
Diagnosis results	Detection logic	Possible malfunction location / Action to take
iPod-BB • unit: gray • connection line: yellow	When either one of the following items is detected: • iPod adapter power supply and ground circuits are malfunctioning. • AV communication circuits between camera control unit and iPod adapter are malfunctioning. • AV communication circuits between BOSE amp. and camera control unit are malfunctioning. • AV communication signal between AV control unit and iPod adapter is malfunctioning.	• iPod adapter power supply and ground circuits. • AV communication circuits between BOSE amp. and camera control unit. • AV communication circuits between camera control unit and iPod adapter.
GPS Antenna • unit: gray • connection line: yellow	GPS antenna connection malfunction is detected.	GPS antenna.
SAT Antenna • unit: gray • connection line: yellow	Satellite radio antenna connection malfunction is detected.	• Satellite radio antenna feeder. • Satellite radio antenna.
Amplifier and iPod-BB • unit: gray • connection line: yellow	When either one of the following items is detected: • AV communication circuits between multifunction switch and BOSE amp. are malfunctioning. (without DVD player models) • AV communication circuits between DVD player and BOSE amp. are malfunctioning. (with DVD player models)	• AV communication circuits between multifunction switch and BOSE amp. (without DVD player models) • AV communication circuits between DVD player and BOSE amp. (with DVD player models)
Amplifier, iPod-BB and DVD Deck • unit: gray • connection line: yellow	Malfunction is detected in AV communication circuits between multifunction switch and DVD player.	AV communication circuits between multifunction switch and DVD player.

CONFIRMATION/ADJUSTMENT MODE

1. Start the diagnosis function and select “Confirmation/Adjustment”. The confirmation/adjustment mode indicates where each item can be checked or adjusted.
2. Select each switch on the “Confirmation/Adjustment Mode” screen to display the relevant trouble diagnosis screen. Press the “BACK” switch to return to the initial Confirmation/Adjustment Mode screen.



Display Diagnosis

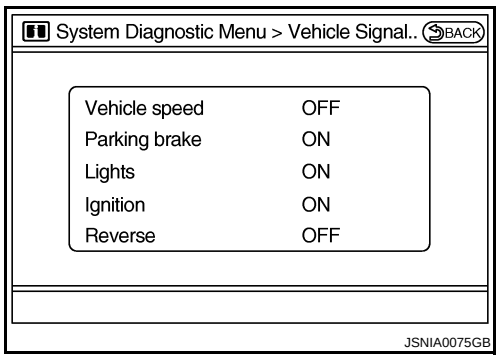


The tint of the color bar indication is as per the following list if RGB signal error is detected.

R (red) signal error : Light blue (Cyan) tint
G (green) signal error : Purple (Magenta) tint
B (blue) signal error : Yellow tint

Vehicle Signals

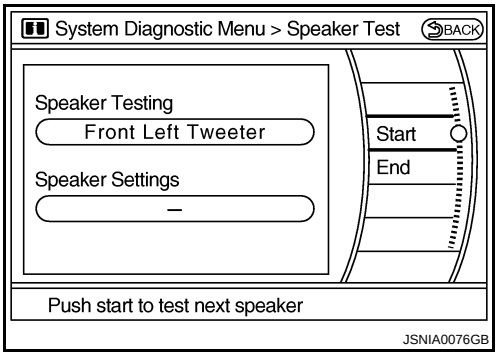
A comparison check can be made of each actual vehicle signal and the signals recognized by the system.



Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Parking brake	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Lights	ON	Light switch ON.	—
	OFF	Light switch OFF.	
Ignition	ON	Ignition switch ON.	—
	OFF	Ignition switch in ACC position.	
Reverse	ON	Shift the selector lever to “R” position.	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever other than “R” position.	

Speaker Test

Select “SPEAKER DIAGNOSIS” to display the Speaker Diagnosis screen. Press “START and NEXT” to generate a test tone in a speaker. Press “Start” to generate a test tone in the next speaker. Press “End” to stop the test tones.



NOTE:

The frequency of test tone emitted from each speaker is as follows.

Front tweeter	**: 3 kHz**
Front door speaker	**: 300 Hz**
Rear door speaker	**: 1 kHz**
Rear surround speaker	**: 1 kHz**
Center speaker	**: 1 kHz**
Woofer	**: 100 Hz**
Seat speaker	**: 1 kHz**

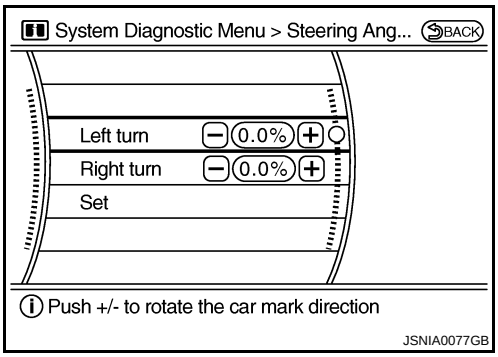
Climate Control

Refer to “HEATER & AIR CONDITIONING CONTROL SYSTEM” for details.

Navigation

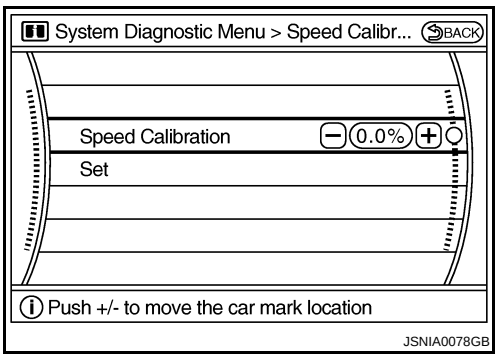
STEERING ANGLE ADJUSTMENT

The steering angle output value detected with the gyroscope is adjusted.

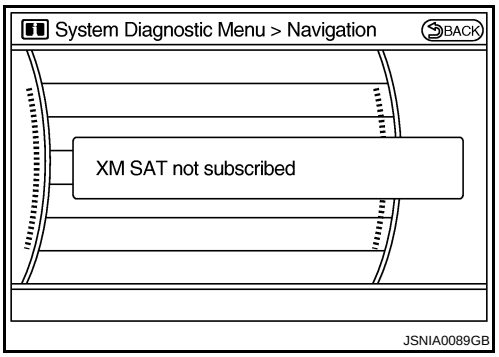


SPEED CALIBRATION

During normal driving, distance error caused by tire wear and tire pressure change is automatically adjusted for by the automatic distance correction function. This function, on the other hand, is for immediate adjustment, in cases such as driving with tire chain fitted on tires.



XM SAT SUBSCRIPTION STATUS
The XM NavTraffic subscription status can be checked.

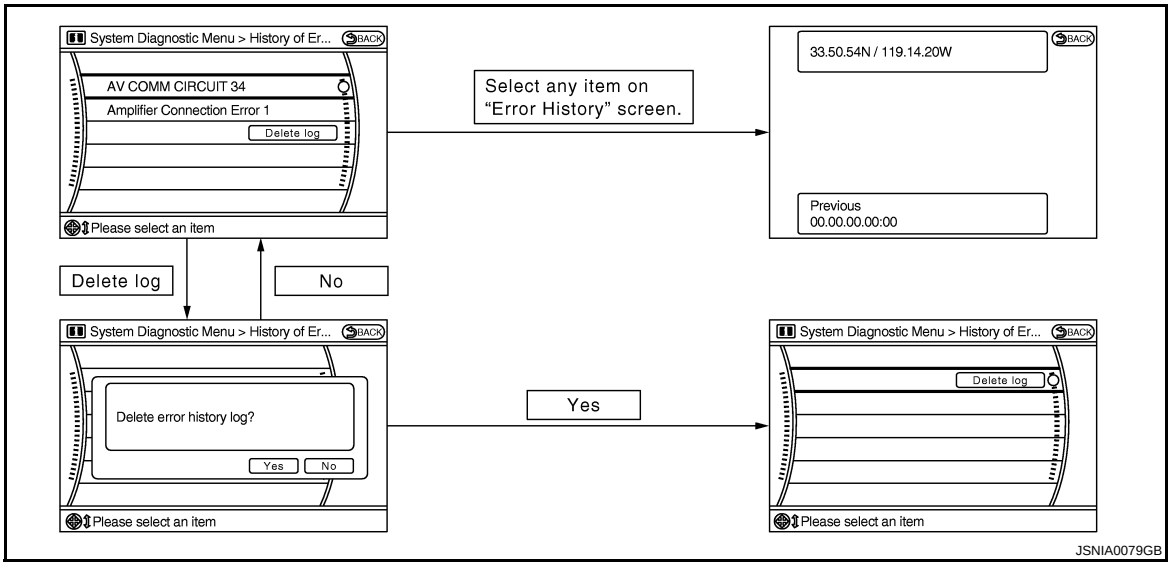


Error History
The self-diagnosis results are judged depending on whether any error occurs from when “Self-diagnosis” is selected until the self-diagnosis results are displayed.
However, the diagnosis results are judged normal if an error has occurred before the ignition SW is turned ON and then no error has occurred until the self-diagnosis start. Check the “Error Record” to detect any error that may have occurred before the self-diagnosis start because of this situation.
The error record displays the time and place of the most recent occurrence of that error. However, take note of the following points.
- If there is a malfunction with the GPS antenna circuit board in the AV control unit, the correct date and time of occurrence may not be able to be displayed.
- Place of the error occurrence is represented by the position of the current location mark at the time an error occurred. If current location mark has deviated from the correct position, then the place of the error occurrence cannot be located correctly.
- The frequency of occurrence is displayed in a count up manner. The actual count up method differs depending on the error item.

Count up method A
- The counter resets to 0 if an error occurs when IGN switch is turned ON. The counter increases by 1 if the condition is normal at a next IGN ON cycle.
- The counter upper limit is 39. Any counts exceeding 39 are ignored.“ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Count up method B
- The counter increases by 1 if an error occurs when IGN switch is ON. The counter will not decrease even if the condition is normal at the next IGN ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. “ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Display type of occurrence frequency	Error history display item
Count up method A	CAN communication line, control unit (CAN), AV communication line, control unit (AV communication)
Count up method B	Other than the above



Error item

Some error items may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items

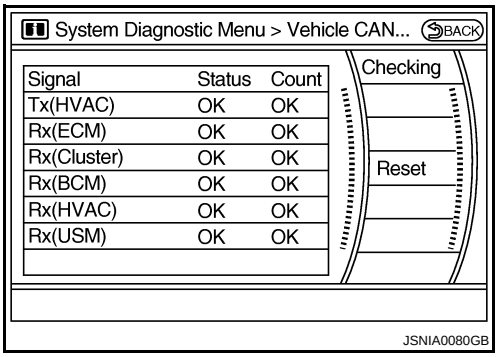
Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-78, "Diagnosis Procedure".
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Replace the AV control unit.
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit	AV control unit malfunction is detected.	
Connection Of Gyro		
XM SERIAL COMM Error		
CAN Controller Memory Error		
Bluetooth Module Connection Error		
HDD CONN Error		
HDD READ Error		
HDD WRITE Error		
HDD COMM Error		
HDD ACCESS Error		
DSP CONN Error		
DSP COMM Error		
Internal Communication Error	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.
GPS Communication Error	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.
GPS ROM Error		
GPS RAM Error		
GPS RTC Error		

Error item	Description	Possible malfunction factor/Action to take
Front Display Connection Error	When either one of the following items is detected: • front display unit power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and front display unit are malfunctioning. • serial communication signal between AV control unit and front display unit is malfunctioning.	• Front display unit power supply and ground circuits. • Serial communication circuits between AV control unit and front display unit.
GPS Antenna Error	GPS antenna connection malfunction is detected.	GPS antenna.
XM Antenna Connection Error	Satellite radio antenna connection malfunction is detected.	• Satellite radio antenna feeder. • Satellite radio antenna.
• AV COMM CIRCUIT • Internal Communication Error	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.
• AV COMM CIRCUIT • Switches Connection Error	When either one of the following items is detected: • Multifunction switch power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and multifunction switch is malfunctioning.	Multifunction switch power supply and ground circuits.
• AV COMM CIRCUIT • DVD Deck Connection Error	When either one of the following items is detected: • DVD player power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and DVD player is malfunctioning.	DVD player power supply and ground circuits.
• AV COMM CIRCUIT • Amplifier Connection Error	When either one of the following items is detected: • BOSE amp. power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and BOSE amp. is malfunctioning.	BOSE amp. power supply and ground circuts.
• AV COMM CIRCUIT • Rearview Camera Connection Error	When either one of the following items is detected: • camera control unit power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and camera control unit is malfunctioning.	Camera control unit power supply and ground circuits.
• AV COMM CIRCUIT • iPod Connection Error	When either one of the following items is detected: • iPod adapter power supply and ground circuits are malfunctioning. • AV communication circuits between camera control unit and iPod adapter are malfunctioning. • AV communication signal between AV control unit and iPod adapter is malfunction.	• iPod adapter power supply and ground circuits. • AV communication circuits between camera control unit and iPod adapter.
• AV COMM CIRCUIT • Rearview Camera Connection Error • iPod Connection Error	Malfunction is detected in AV communication circuits between BOSE amp. and camera control unit.	AV communication circuits between BOSE amp. and camera control unit.

Error item	Description	Possible malfunction factor/Action to take
• AV COMM CIRCUIT • Amplifier Connection Error • Rearview Camera Connection Error • iPod Connection Error	Without DVD player models • AV communication circuits between multifunction switch and BOSE amp. are malfunctioning. With DVD player models • AV communication circuits between DVD player and BOSE amp. are malfunctining.	• AV communication circuits between multifunction switch and BOSE amp. (without DVD player models) • AV communication circuits between DVD player and BOSE amp. (with DVD player models)
• AV COMM CIRCUIT • DVD Deck Connection Error • Amplifier Connection Error • Rearview Camera Connection Error • iPod Connection Error	Malfunction is detected in AV communication circuits between multifunction switch and DVD player.	AV communication circuits between multifunction switch and DVD player.
Without DVD player models • AV COMM CIRCUIT • Switches Connection Error • Amplifier Connection Error • Rearview Camera Connection Error • iPod Connection Error	Malfunction is detected in AV communication circuits between multifunction switch and AV control unit.	AV communication circuits between multifunction switch and AV control unit.
With DVD player models • AV COMM CIRCUIT • Switches Connection Error • DVD Deck Connection Error • Amplifier Connection Error • Rearview Camera Connection Error • iPod Connection Error		
Without DVD player models • AV COMM CIRCUIT • Internal Communication Error • Switches Connection Error • Amplifier Connection Error • Rearview Camera Connection Error • iPod Connection Error	Malfunction is detected in AV communication circuits.	Check and repair the short circuit in AV communication circuits.
With DVD player models • AV COMM CIRCUIT • Internal Communication Error • Switches Connection Error • DVD Deck Connection Error • Amplifier Connection Error • Rearview Camera Connection Error • iPod Connection Error		

Vehicle CAN Diagnosis

- CAN communication status and error counter is displayed.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.

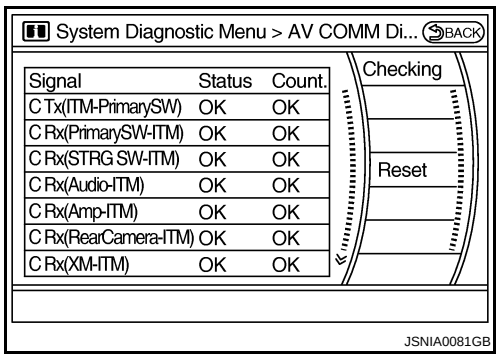


Items	Display (Current)	Malfunction counter (Past)
Tx (HVAC)	OK / UNKWN	OK / 0 – 39
Rx (ECM)	OK / UNKWN	OK / 0 – 39
Rx (Cluster)	OK / UNKWN	OK / 0 – 39
Rx (BCM)	OK / UNKWN	OK / 0 – 39
Rx (HVAC)	OK / UNKWN	OK / 0 – 39
Rx (USM)	OK / UNKWN	OK / 0 – 39

Items	Display (Current)	Malfunction counter (Past)
Rx (TPMS)	OK / UNKWN	OK / 0 – 39
Rx (STRG)	OK / UNKWN	OK / 0 – 39

AV COMM Diagnosis

- Displays the communication status between AV control unit (master unit) and each unit.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.



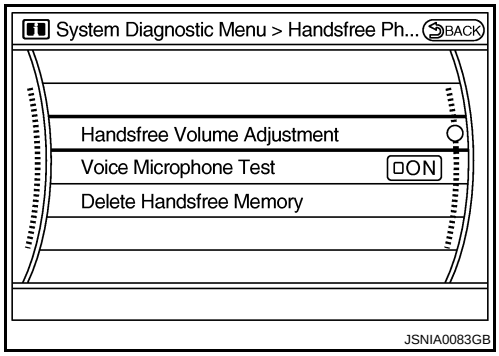
Items	Status (Current)	Counter (Past)
C Tx(ITM–PrimarySW)	OK / UNKWN	OK / 0 – 39
C Rx(PrimarySW–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(STRG SW–ITM)	OK / UNKWN	OK / 0 – 39
C Rx (Audio–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(Amp–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(RearCamera–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(DVD–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(XM–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(iPod–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(Amp–Audio)	OK / UNKWN	OK / 0 – 39
C Rx(DVD–Audio)	OK / UNKWN	OK / 0 – 39
C Rx(iPod–Audio)	OK / UNKWN	OK / 0 – 39
C Tx(Audio–ITM)	OK / UNKWN	OK / 0 – 39

NOTE:

- Any units with “—” displayed have no history of vehicle connection.
- “Audio” and “Amp” indicate the same status because “Amp” indicates the status of the amplifier integrated in the AV control unit.
- “STRG SW”, “Amp”“XM” indicate the same status as “Audio”.

Hands-Free Phone

The hands-free phone reception volume adjustment, microphone and speaker test, and memory erase functions are also available.

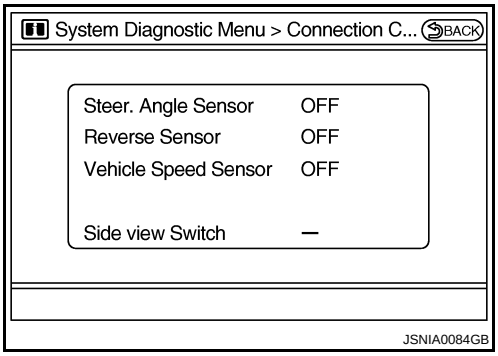


Camera Cont.

The two functions of “Connection Confirmation” and “Adjust Offset of Rear View Camera” are available.

CONNECTION CONFIRMATION

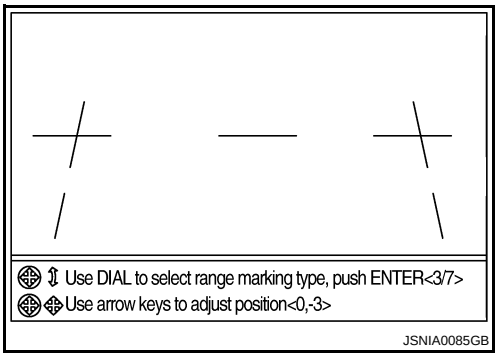
The steering angle sensor, reverse signal and vehicle speed sensor can be inspected.



Diagnosis item	Display	Vehicle status
Steer. Angle Sensor	ON	When steering the vehicle with ignition switch ON (remains ON until connection mode is stopped when it is turned ON).
	OFF	• Ignition switch at ACC. • No steering with ignition switch ON.
	—	Malfunction detected in camera connection recognition signal.
Reverse Sensor	ON	Selector lever is in “R” with ignition switch ON.
	OFF	• Ignition switch at ACC. • Selector lever is in position other than “R” with ignition switch ON.
	—	Malfunction detected in camera-connection recognition signal.
Vehicle Speed Sensor	ON	Vehicle speed is more than 0 km/h (0 MPH) with ignition switch ON.
	OFF	• Ignition switch at ACC. • Vehicle speed is 0 km/h (0 MPH) with ignition switch ON.
	—	Malfunction detected in camera connection recognition signal.
Side view Switch	—	Not used.

ADJUST OFFSET OF REAR VIEW CAMERA

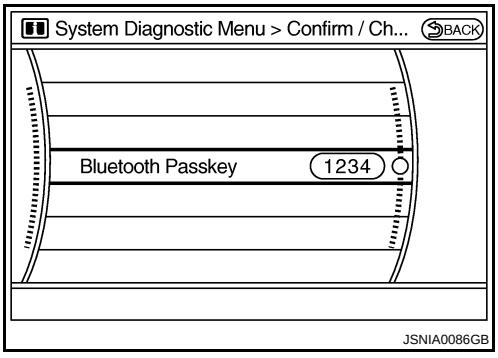
Use this mode to adjust the guide line display position of the rear-view monitor if necessary after removing the rear view monitor camera.



Bluetooth

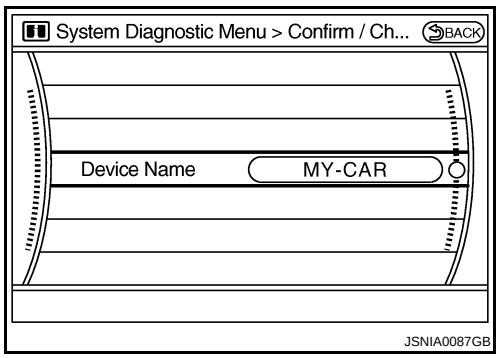
Confirm / Change Passkey

- The passkey of Bluetooth can be confirmed and changed.
- The passkey can be changed by four digits within 0 to 9.



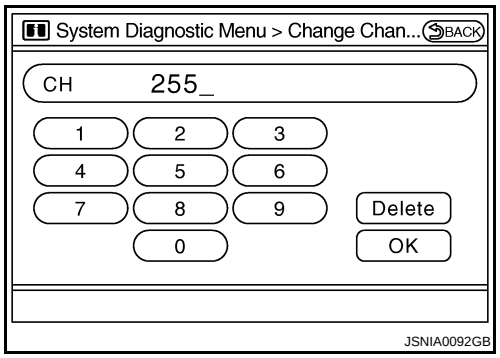
Comfirm / Change Device Name

- The device name of Bluetooth can be confirmed and changed.
- The device name can be changed by sixteen digits within A to Z (small character can be used) and - (hyphen).

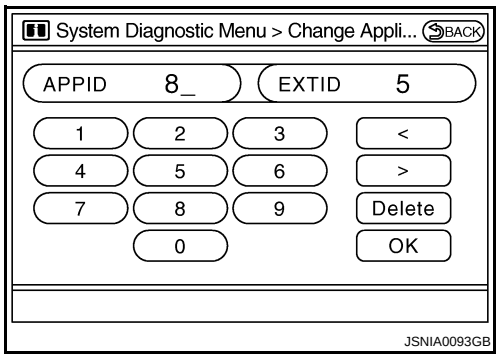


SAT

- Change Channel
- Any necessary channels required to receive traffic information from the satellite radio system can be set.

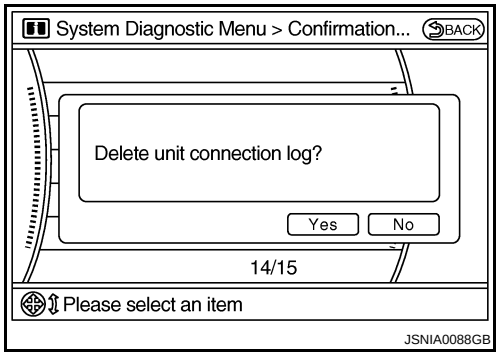


- Change Application ID
- Any application ID'-s required to receive traffic information from the satellite radio system can be set.



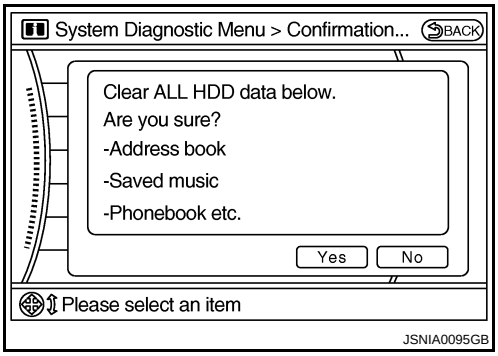
Delete Unit Connection Log

Deletes any unit connection records and error records from the AV control unit memory. (Clear the records of the unit that has been removed.)



Initialize Settings

Deletes data stored in HDD.



WITH NAVIGATION : CONSULT-III Function (MULTI AV)

INFOID:0000000004155641

CONSULT-III FUNCTIONS

CONSULT-III performs the following functions via the communication with the AV control unit.

Diagnosis mode	Description
Ecu Identification	The part number of AV control unit can be checked.
Self Diagnostic Result	Performs a diagnosis on the AV control unit and a connection diagnosis for the communication circuit of the Multi AV system, and displays the current and past malfunctions collectively.
Data Monitor	The diagnosis of vehicle signal that is input to the AV control unit can be performed.

AV COMMUNICATION

When “AV communication” of “CAN Diag Support Monitor” is selected, the following function will be performed.

AV communication	AV&NAVI C/U	Displays the communication status from AV control unit to each unit as well as the error counter.
	AUDIO	Displays the AV control unit communication status and the error counter.

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSIS RESULT

- In CONSULT-III self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates “CRNT”. The past malfunction indicates “PAST”.
- The timing is displayed as “0” if any of the error codes [U1000], [U1010], [U1300] and [U1310] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

Self-diagnosis results display item

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-78, "Diagnosis Procedure".

Error item	Description	Possible malfunction factor/Action to take
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit.
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	
Control Unit FLASH-ROM [U1200]	AV control unit malfunction is detected.	
Gyro NO CONN [U1201]		
CAN CONT [U1216]		
BLUETOOTH CONN [U1217]		
HDD CONN [U1218]		
HDD READ [U1219]		
XM SERIAL COMM [U1220]		
HDD WRITE [U121A]		
HDD COMM [U121B]		
HDD ACCESS [U121C]		
DSP CONN [U121D]		
DSP COMM [U121E]		
INTERNAL COMM [U121F]	Malfunction is detected in AV control unit power supply and ground circuits. ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.
GPS COMM [U1204]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.
GPS ROM [U1205]		
GPS RAM [U1206]		
GPS RTC [U1207]		
FRONT DISP CONN [U1243]	When either one of the following items is detected: • front display unit power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and front display unit are malfunctioning. • serial communication signal between AV control unit and front display unit is malfunctioning.	• Front display unit power supply and ground circuits. • Serial communication circuits between AV control unit and front display unit.
GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	GPS antenna.
CAMERA CONT CONN [U1250]	Malfunction is detected in camera connection recognition circuit between AV control unit and camera control unit.	Camera-connection recognition circuit between AV control unit and camera control unit.
XM ANTENNA CONN [U1258]	Poor connection is detected in satellite radio antenna.	• Satellite radio antenna feeder. • Satellite radio antenna.
• AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F]	Malfunction is detected in AV control unit power supply and ground circuits. ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items is detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and multifunction switch is malfunctioning.	Multifunction switch power supply and ground circuits.

Error item	Description	Possible malfunction factor/Action to take
• AV COMM CIRCUIT [U1300] • DVD DECK CONN [U1248]	When either one of the following items is detected: • DVD player power supply and ground circuits. • AV communication signal between AV control unit and DVD player.	DVD player power supply and ground circuits.
• AV COMM CIRCUIT [U1300] • AMP CONN [U124E]	When either one of the following items is detected: • BOSE amp. power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and BOSE amp. is malfunctioning.	BOSE amp. power supply and ground circuits.
• AV COMM CIRCUIT [U1300] • REAR CAMERA LAN CONN [U1252]	When either one of the following items is detected: • camera control unit power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and camera control unit is malfunctioning.	Camera control unit power supply and ground circuits.
• AV COMM CIRCUIT [U1300] • IPod CONN [U1254]	When either one of the following items is detected: • iPod adapter power supply and ground circuits are malfunctioning. • AV communication circuits between camera control unit and iPod adapter are malfunctioning. • AV communication signal between AV control unit and iPod adapter is malfunctioning.	• iPod adapter power supply and ground circuits. • AV communication circuits between camera control unit and iPod adapter.
• AV COMM CIRCUIT [U1300] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits between BOSE amp. and camera control unit.	AV communication circuits between BOSE amp. and camera control unit.
• AV COMM CIRCUIT [U1300] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Without DVD player models • Malfunction is detected in AV communication circuits between multifunction switch and BOSE amp. are malfunctioning. With DVD player models • Malfunction is detected in AV communication circuits between DVD player and BOSE amp. are malfunctioning.	Without DVD player models • AV communication circuits between multifunction switch and BOSE amp. With DVD player models • AV communication circuits between DVD player and BOSE amp.
• AV COMM CIRCUIT [U1300] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits between multifunction switch and DVD player.	AV communication circuits between multifunction switch and DVD player.
Without DVD player models • AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits between AV control unit and multifunction switch.	AV communication circuits between AV control unit and multifunction switch.
With DVD player models • AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]		

Error item	Description	Possible malfunction factor/Action to take
Without DVD player models • AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F] • SWITCH CONN [U1240] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits.	Check and repair the short circuit in AV communication circuits.
With DVD player models • AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F] • SWITCH CONN [U1240] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]		

DATA MONITOR

ALL SIGNALS
- Displays the status of the following vehicle signals inputted into the AV control unit.
- For each signal, actual signal can be compared with the condition recognized on the system.

Display Item	Display	Vehicle status	Remarks
VHCL SPD SIG	On	Vehicle speed >0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed =0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	
	Off	Parking brake is released.	
ILLUM SIG	On	Block the light beam from the auto light optical sensor when the light SW is ON.	—
	Off	Expose the auto light optical sensor to light when the light SW is OFF or ON.	
IGN SIG	On	Ignition switch ON.	
	Off	Ignition switch in ACC position.	
REV SIG	On	Selector lever in R position.	Changes in indication may be delayed. This is normal.
	Off	Selector lever in any position other than R.	

SELECTION FROM MENU
Allows the technician to select which vehicle signals should be displayed and displays the status of the selected vehicle signals.

Item to be selected	Description
VHCL SPD SIG	The same as when “ALL SIGNALS” is selected.
PKB SIG	
ILLUM SIG	
IGN SIG	
REV SIG	

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

Diagnosis Description

INFOID:0000000004155642

HANDS-FREE PHONE SYSTEM ON BOARD DIAGNOSIS

During on board diagnosis the diagnosis function of TEL adapter unit starts with the operation of the steering switch and performs the diagnosis when ignition switch ACC.

ON BOARD DIAGNOSIS ITEM

The on board diagnosis has 3 modes: the self-diagnosis mode that performs the trouble diagnosis, the speaker adaptation data deleting mode and the hands-free phone system initialization mode.

CAUTION:

- **Perform the diagnosis with the vehicle stopped.**
- **Perform STEP2 if necessary.**

STEP	MODE	Description
STEP1	Self-diagnosis	The self-diagnosis mode performs the microphone test and the diagnosis of TEL adapter unit, TEL antenna and steering unit, and then reads out the results with the sound and indicates them on the display.
STEP2	Speaker adaptation data deleting	The speaker adaptation data deleting mode can delete the speaker adaptation data.
	Hands-free phone system initialization	Hands-free phone system initialization mode can perform the initialization of hands-free phone system.

SELF-DIAGNOSIS RESULTS

Self-diagnosis mode reads out the self-diagnosis results and indicates DTC on the display.

NOTE:

- Error count is read out simultaneously when reading out the DTC name.
- The errors are read out continuously when some errors occur at the same time. The DTC displays are combined and displayed. For example, DTC 01100 is displayed when DTC 01000 and DTC 00100 are indicated at the same time.

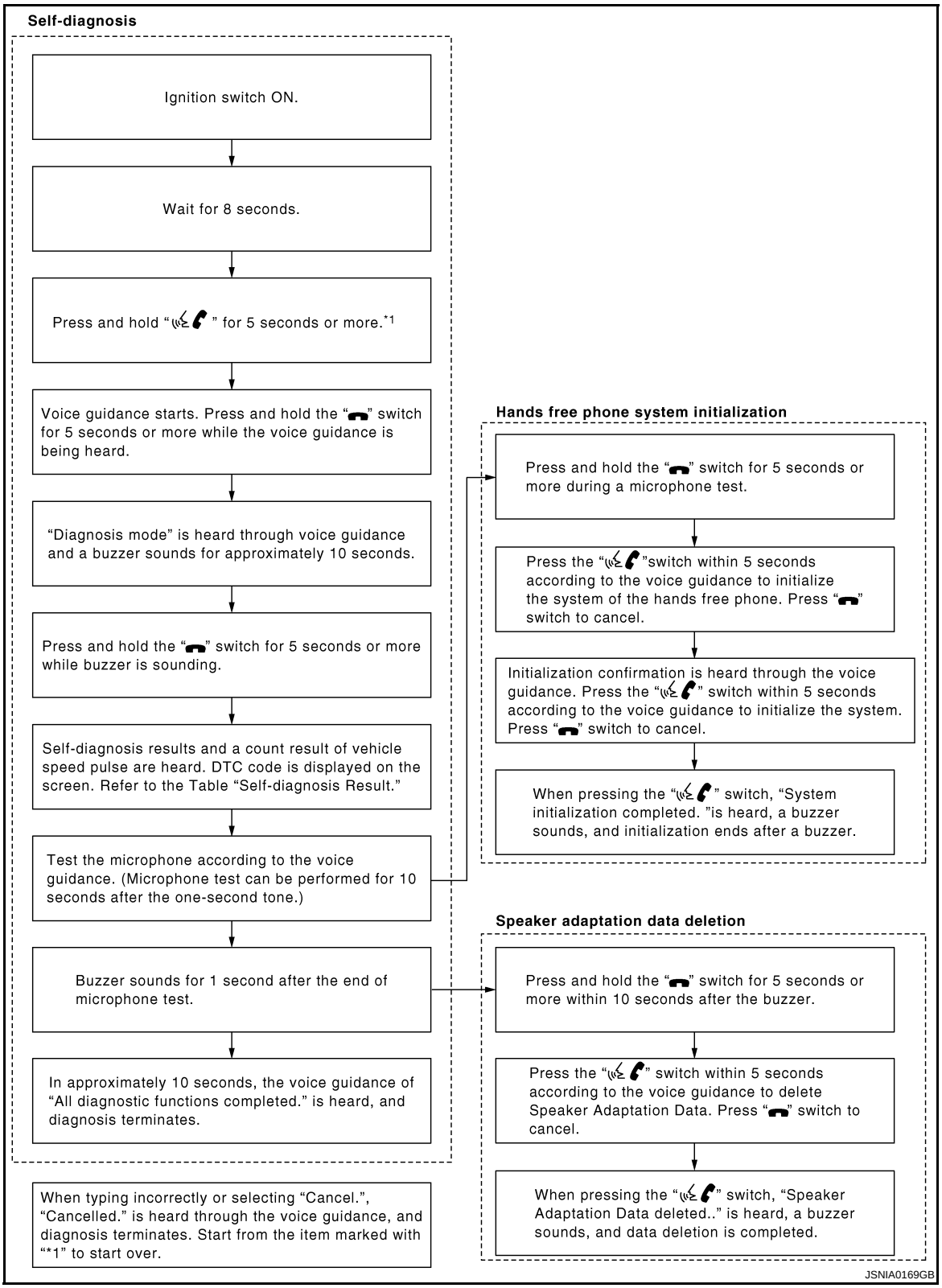
Self-diagnosis results

DTC	DTC name	Possible causes
DTC 10000	INTERNAL FAILURE	TEL adapter unit
DTC 01000	ANT. SHORT TO BATT OR OPEN	TEL antenna
DTC 00100	ANT. SHORT TO GROUND	
DTC 00010	STEERING REMOTE BUTTON STUCK A	Steering switch
DTC 00001	STEERING REMOTE BUTTON STUCK B	
DTC 00000	THERE ARE NO FAILURE RECORDS TO REPORT	—

The details of error count

The error count guides “0” when the error occurs. The next time it counts up “1” if it is normal with the ignition switch ON. It continues the count up unless the initialization of hands-free phone system is performed.

FLOW CHART OF TROUBLE DIAGNOSIS



COMPONENT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000004155643

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-29, "CAN Communication Signal Chart".

DTC Logic

INFOID:0000000004155644

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	Diagnostic item is detected when...	Probable malfunction location
U1000	CAN COMM CIRCUIT	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

Diagnosis Procedure

INFOID:0000000004155645

1. PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of “MULTI AV”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to “LAN system”. Refer to LAN-20, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI section. Refer to GI-26, "How to Perform Efficient Diagnosis for an Electrical Incident".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000004155646

Initial diagnosis of AV control unit.

DTC Logic

INFOID:0000000004155647

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	Diagnostic item is detected when...	Probable malfunction location
U1010	CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	AV control unit.

Diagnosis Procedure

INFOID:0000000004155648

1.REPLACE AV CONTROL UNIT

When DTC U1010 is detected, replace AV control unit.

>> INSPECTION END

U1310 AV CONTROL UNIT

WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155649

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Auxiliary image and sound signal are input from the auxiliary input jacks.

WITHOUT NAVIGATION : DTC Logic

INFOID:0000000004155650

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace AV control unit.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155651

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

WITH NAVIGATION : DTC Logic

INFOID:0000000004155652

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace AV control unit.

U1200 AV CONTROL UNIT

WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155653

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Auxiliary image and sound signal are input from the auxiliary input jacks.

WITHOUT NAVIGATION : DTC Logic

INFOID:0000000004155654

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1200	Cont Unit FLASH- ROM [U1200]	An internal malfunction is detected in AV control unit (FLASH-ROM).	Replace AV control unit.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155655

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

WITH NAVIGATION : DTC Logic

INFOID:0000000004155656

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1200	Cont Unit FLASH-ROM [U1200]	An internal malfunction is detected in AV control unit (FLASH-ROM).	Replace AV control unit.

U1201 AV CONTROL UNIT

Description

INFOID:0000000004155657

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155658

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1201	GYRO NO CONN [U1201]	Internal malfunction of AV control unit (gyrocompass disconnection) is detected.	Replace AV control unit.

U1216 AV CONTROL UNIT

WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155659

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Auxiliary image and sound signal are input from the auxiliary input jacks.

WITHOUT NAVIGATION : DTC Logic

INFOID:0000000004155660

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1216	CAN CONT [U1216]	Internal malfunction of AV control unit (CAN controller) is detected.	Replace AV control unit.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155661

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

WITH NAVIGATION : DTC Logic

INFOID:0000000004155662

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1216	CAN CONT [U1216]	Internal malfunction of AV control unit (CAN controller) is detected.	Replace AV control unit.

U1217 AV CONTROL UNIT

Description

INFOID:0000000004155663

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155664

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1217	BLUETOOTH MODULE CONN [U1217]	Internal malfunction of AV control unit (Bluetooth module connection malfunction) is detected.	Replace AV control unit.

U1218 AV CONTROL UNIT

Description

INFOID:0000000004155665

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155666

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1218	HDD-CONN [U1218]	Internal malfunction of AV control unit (HDD connection malfunction) is detected.	Replace AV control unit.

U1219 AV CONTROL UNIT

Description

INFOID:0000000004155667

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155668

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1219	HDD-READ [U1219]	Internal malfunction of AV control unit (HDD read malfunction) is detected.	Replace AV control unit.

U1220 AV CONTROL UNIT

Description

INFOID:0000000004155669

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155670

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1220	XM SERIAL COMM [U1220]	Internal malfunction of AV control unit (satellite radio tuner communication error) is detected.	Replace AV control unit.

U121A AV CONTROL UNIT

Description

INFOID:0000000004155671

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155672

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U121A	HDD-WRITE [U121A]	Internal malfunction of AV control unit (HDD write malfunction) is detected.	Replace AV control unit.

U121B AV CONTROL UNIT

Description

INFOID:0000000004155673

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155674

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U121B	HDD-COMM [U121B]	Internal malfunction of AV control unit (HDD communication error) is detected.	Replace AV control unit.

U121C AV CONTROL UNIT

Description

INFOID:0000000004155675

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155676

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U121C	HDD-ACCESS [U121C]	Internal malfunction of AV control unit (HDD access error) is detected.	Replace AV control unit.

U121D AV CONTROL UNIT

Description

INFOID:0000000004155677

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155678

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U121D	DSP CONN [U121D]	Internal malfunction of AV control unit (DSP connection error) is detected.	Replace AV control unit.

U121E AV CONTROL UNIT

Description

INFOID:0000000004155679

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155680

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U121E	DSP COMM [U121E]	Internal malfunction of AV control unit (DSP communication error) is detected.	Replace AV control unit.

U121F AV CONTROL UNIT

Description

INFOID:0000000004155681

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155682

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U121F	INTERNAL COMM [U121F]	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.

Diagnosis Procedure

INFOID:0000000004155683

1.CHECK AV CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check AV control unit power supply and ground circuit. Refer to AV-113, "AV CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace malfunctioning parts.

U1204 GPS

Description

INFOID:0000000004155684

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155685

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1204	GPS CONN [U1204]	Internal malfunction of AV control unit (GPS malfunction) is detected.	Replace AV control unit.

Diagnosis Procedure

INFOID:0000000004155686

1. PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit.
NO >> The intermittent malfunction caused by strong radio interference can be detected.

U1205 GPS

Description

INFOID:0000000004155687

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155688

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1205	GPS ROM [U1205]	Internal malfunction of AV control unit (GPS malfunction) is detected.	Replace AV control unit.

Diagnosis Procedure

INFOID:0000000004155689

1. PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit.
NO >> The intermittent malfunction caused by strong radio interference can be detected.

U1206 GPS

Description

INFOID:0000000004155690

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155691

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1206	GPS RAM [U1206]	Internal malfunction of AV control unit (GPS malfunction) is detected.	Replace AV control unit.

Diagnosis Procedure

INFOID:0000000004155692

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit.
NO >> The intermittent malfunction caused by strong radio interference can be detected.

U1207 GPS

Description

INFOID:0000000004155693

Replace the AV control unit if this DTC is displayed. Refer to AV-482, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155694

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1207	GPS RTC [U1207]	Internal malfunction of AV control unit (GPS malfunction) is detected.	Replace AV control unit.

Diagnosis Procedure

INFOID:0000000004155695

1. PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit.
NO >> The intermittent malfunction caused by strong radio interference can be detected.

U1243 DISPLAY UNIT
WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155696

Part name	Description
FRONT DISPLAY UNIT	• Front display image is controlled by the serial communication from AV control unit. • RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing). • Synchronize signal (HP, VP) is output to AV control unit. • Auxiliary image signal is input from AV control unit.

WITHOUT NAVIGATION : DTC Logic

INFOID:0000000004155697

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1243	FRONT DISP CONN [U1243]	When either one of the following item is detected: • front display unit power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and front display unit are malfunctioning. • serial communication signal between AV control unit and front display unit is malfunctioning.	• Front display unit power supply and ground circuits. • Serial communication circuits between AV control unit and front display unit.

WITHOUT NAVIGATION : Diagnosis Procedure

INFOID:0000000004155698

1.CHECK FRONT DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check front display unit power supply and ground circuit. Refer to AV-114, "FRONT DISPLAY UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminals 11, 22 and AV control unit harness connector terminals 56, 44.

11 - 56 : Continuity should exist.
22 - 44 : Continuity should exist.

4. Check continuity between front display unit harness connector terminals 11, 22 and ground.

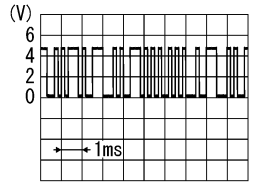
11, 22 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK COMMUNICATION SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 11 and ground.

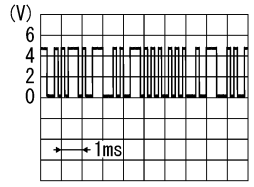
Terminal	Condition		Reference value
11 - Ground	Ignition switch ON	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit.

4. CHECK COMMUNICATION SIGNAL

Check signal between front display unit harness connector terminal 22 and ground.

Terminal	Condition		Reference value
22 - Ground	Ignition switch ON	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace front display unit.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155699

Part name	Description
FRONT DISPLAY UNIT	• Front display image is controlled by the serial communication from AV control unit. • Synchronize signal (HP, VP) is output to AV control unit. • Touch panel function can be operated for each system by touching a display directly. • RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing). Camera image signal is input from camera control unit. • Auxiliary image signal and DVD image signal are input from the DVD player (with DVD player models). • Auxiliary image signal is input from the auxiliary input jacks. (without DVD player models)

WITH NAVIGATION : DTC Logic

INFOID:0000000004155700

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1243	FRONT DISP CONN [U1243]	When either one of the following items is detected: • front display unit power supply and ground circuits. • serial communication circuits between AV control unit and front display unit. • serial communication signal between AV control unit and front display unit.	• Front display unit power supply and ground circuits. • Serial communication circuits between AV control unit and front display unit.

WITH NAVIGATION : Diagnosis Procedure

INFOID:0000000004155701

1.CHECK FRONT DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check front display unit power supply and ground circuits. Refer to AV-114, "FRONT DISPLAY UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminals 11, 22 and AV control unit harness connector terminals 102, 103.

11 - 102 : Continuity should exist.
22 - 103 : Continuity should exist.

4. Check continuity between front display unit harness connector terminals 11, 22 and ground.

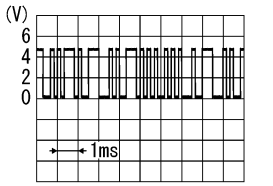
11, 22 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK SERIAL COMMUNICATION SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 11 and ground.

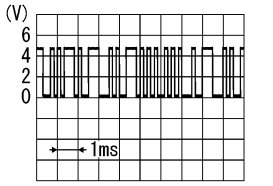
Terminal	Condition		Reference value
11 - Ground	Ignition switch ON	When adjusting front display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit.

4.CHECK SERIAL COMMUNICATION SIGNAL

Check signal between front display unit harness connector terminal 22 and ground.

Terminal	Condition		Reference value
22 - Ground	Ignition switch ON	When adjusting front display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace front display unit.

U1244 GPS ANTENNA

Description

INFOID:0000000004155702

Part name	Description
GPS ANTENNA	GPS signal is received and transmitted to AV control unit.

DTC Logic

INFOID:0000000004155703

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1244	GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	GPS antenna disconnection.

Diagnosis Procedure

INFOID:0000000004155704

1.GPS ANTENNA CHECK

Visually check GPS antenna and antenna feeder.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Disconnect GPS antenna connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit terminal 105 and ground.

105 - Ground : Approx. 5 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace AV control unit.

U1250 CAMERA CONTROL UNIT

Description

INFOID:0000000004155705

Part name	Description
CAMERA CONTROL UNIT	• Camera image signal is input from rear view camera, and camera image is indicated on the front display. • Power (camera ON signal) is transmitted to rear view camera. • Controlled by AV communication transmitted from AV control unit. • AV control unit recognizes the presence of camera system with camera connection recognition signal.

DTC Logic

INFOID:0000000004155706

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1250	CAMERA CONT. CONN [U1250]	Malfunction is detected in Camera-connection recognition signal circuit.	Camera-connection recognition signal circuit.

Diagnosis Procedure

INFOID:0000000004155707

1.CHECK CAMERA-CONNECTION RECOGNITION SIGNAL CIRCUIT

1. Disconnect AV control unit connector and camera control unit connector.
2. Check continuity between AV control unit harness connector terminal 40 and camera control unit harness connector terminal 14.

40 - 14 : Continuity should exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector terminal 40 and ground.

40 - Ground : Approx. 5 V

Is the inspection result normal?

YES >> Replace camera control unit.
NO >> Replace AV control unit.

U1255 SATELLITE RADIO TUNER

Description

INFOID:0000000004155708

Part name	Description
SATELLITE RADIO TUNER	• Inputs the satellite radio signal from satellite radio antenna and outputs it to the AV control unit. • It is controlled with the communication (communication signal, request signal) from AV control unit.

DTC Logic

INFOID:0000000004155709

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1255	SAT CONN [U1255]	When either one of the following items is detected: • satellite radio tuner power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and satellite radio tuner are malfunctioning. • serial communication or request signal between AV control unit and satellite radio tuner is malfunctioning. • request signal circuit between AV control unit and satellite radio tuner is malfunctioning.	• Satellite radio tuner power supply and ground circuits. • Communication circuits between AV control unit and satellite radio tuner. • Request signal circuit between AV control unit and satellite radio tuner.

Diagnosis Procedure

INFOID:0000000004155710

1.CHECK SATELLITE RADIO TUNER POWER SUPPLY AND GROUND CIRCUIT

Check satellite radio tuner power supply and ground circuits. Refer to AV-120, "SATELLITE RADIO TUNER : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUIT AND REQUEST SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and satellite radio tuner connector.
3. Check continuity between AV control unit harness connector terminals 28, 29, 30 and satellite radio tuner harness connector terminals 8, 9, 10.

28 - 8 : Continuity should exist.
29 - 9 : Continuity should exist.
30 - 10 : Continuity should exist.

4. Check continuity between AV control unit harness connector terminals 28, 29, 30 and ground.

28 - Ground : Continuity should not exist.
29 - Ground : Continuity should not exist.
30 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector terminal 28, 29 and ground.

28 - Ground	**: Approx 7.0 V**
29 - Ground	**: Approx 7.0 V**

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit.

4. CHECK SATELLITE RADIO TUNER

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector.
3. Connect satellite radio tuner.
4. Turn ignition switch ON.
5. Check voltage between satellite radio tuner harness connector terminal 10 and ground.

10 - Ground	**: Approx 7.0 V**

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace satellite radio tuner.

U1258 SATELLITE RADIO ANTENNA

Description

INFOID:0000000004155711

Part name	Description
SATELLITE RADIO ANTENNA	Satellite radio signal is received and transmitted to AV control unit.

DTC Logic

INFOID:0000000004155712

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1258	XM ANTENNA CONN [U1258]	Satellite radio antenna connection malfunction is detected.	• Satellite radio antenna feeder. • Satellite radio antenna.

Diagnosis Procedure

INFOID:0000000004155713

1. SATELLITE RADIO ANTENNA CHECK

Visually check satellite radio antenna and antenna feeder.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2. CHECK AV CONTROL UNIT VOLTAGE

1. Disconnect satellite radio antenna connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit terminal 110 and ground.

110 - Ground : Approx. 5 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace AV control unit.

U1300 AV COMM CIRCUIT
WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155714

U1300 is indicated when malfunction occurs in communication signal of multi AV system. Indicated simultaneously, without fail, with the malfunction of control units connected to AV control unit with communication line. Determine the possible malfunction cause from the table below.

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items is detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and multifunction switch is malfunctioning.	Multifunction switch power supply and ground circuits.
U1300 U1256	• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	When either one of the following items is detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and TEL adapter unit are malfunctioning. • AV communication signal between AV control unit and TEL adapter unit is malfunctioning.	• TEL adapter unit power supply and ground circuits. • AV communication circuits between multifunction switch and TEL adapter unit.
U1300 U1240 U1256	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • HAND FREE CONN [U1256]	Malfunction is detected in AV communication circuits.	• AV communication circuits between AV control unit and multifunction switch. • Check and repair the short circuit in AV communication circuits.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155715

U1300 is indicated when malfunction occurs in communication signal of multi AV system. Indicated simultaneously, without fail, with the malfunction of control units connected to AV control unit with communication line. Determine the possible malfunction cause from the table below.

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display contents of CONSULT-III	Description	Possible malfunction factor/Action to take
U1300 U121F	• AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F]	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items is detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and multifunction switch is malfunctioning.	Multifunction switch power supply and ground circuits.
U1300 U1248	• AV COMM CIRCUIT [U1300] • DVD DECK CONN [U1248]	When either one of the following items is detected: • DVD player power supply and ground circuits. • AV communication signal between AV control unit and DVD player.	DVD player power supply and ground circuits.

DTC	Display contents of CONSULT-III	Description	Possible malfunction factor/Action to take
U1300 U124E	• AV COMM CIRCUIT [U1300] • AMP CONN [U124E]	When either one of the following items is detected: • BOSE amp. power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and BOSE amp. is malfunctioning.	BOSE amp. power supply and ground circuits.
U1300 U1252	• AV COMM CIRCUIT [U1300] • REAR CAMERA LAN CONN [U1252]	When either one of the following items is detected: • camera control unit power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and camera control unit is malfunctioning.	Camera control unit power supply and ground circuits.
U1300 U1254	• AV COMM CIRCUIT [U1300] • IPod CONN [U1254]	When either one of the following items is detected: • iPod adapter power supply and ground circuits are malfunctioning. • AV communication circuits between camera control unit and iPod adapter are malfunctioning. • AV communication signal between AV control unit and iPod adapter is malfunctioning.	• iPod adapter power supply and ground circuits. • AV communication circuits between camera control unit and iPod adapter.
U1300 U1252 U1254	• AV COMM CIRCUIT [U1300] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits between BOSE amp. and camera control unit.	AV communication circuits between BOSE amp. and camera control unit.
U1300 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Without DVD player models • Malfunction is detected in AV communication circuits between multifunction switch and BOSE amp. are malfunctioning. With DVD player models • Malfunction is detected in AV communication circuits between DVD player and BOSE amp. are malfunctioning.	Without DVD player models • AV communication circuits between multifunction switch and BOSE amp. With DVD player models • AV communication circuits between DVD player and BOSE amp.
U1300 U1248 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits between multifunction switch and DVD player.	AV communication circuits between multifunction switch and DVD player.
U1300 U124E U1252 U1254	Without DVD player models • AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits between AV control unit and multifunction switch.	AV communication circuits between AV control unit and multifunction switch.
U1300 U1240 U1248 U124E U1252 U1254	With DVD player models • AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]		

DTC	Display contents of CONSULT-III	Description	Possible malfunction factor/Action to take
U1300 U121F U1240 U124E U1252 U1254	Without DVD player models • AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F] • SWITCH CONN [U1240] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits.	Check and repair the short circuit in AV communication circuits.
U1300 U121F U1240 U1248 U124E U1252 U1254	With DVD player models • AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F] • SWITCH CONN [U1240] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]		

POWER SUPPLY AND GROUND CIRCUIT
AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000004155716

Without Navigation

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6
Ignition switch ON or START	12

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M76	19	OFF	Battery voltage
ACC power supply	M76	7	ACC	
Ignition signal	M79	104	ON	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between AV control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors.
3. Check continuity between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M76	20	OFF	Existed
	M79	85		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

With Navigation

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6
Ignition switch ON or START	12

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M76	19	OFF	Battery voltage
	M78	22		
		24		
ACC power supply	M76	7	ACC	Battery voltage
	M78	25		
Ignition signal	M78	35	ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between AV control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors.
3. Check continuity between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M78	21	OFF	Existed
		23		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

FRONT DISPLAY UNIT

FRONT DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000004155717

Without Navigation

1.CHECK POWER SUPPLY CIRCUIT (FRONT DISPLAY SIDE)

Check voltage between front display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Signal VCC	M203	3	ACC	9 V
Inverter VCC		2		

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

1. Turn ignition switch OFF.
2. Disconnect the harness connector between front display unit and AV control unit.
3. Check continuity between front display unit harness connector M203 and AV control unit harness connector M222.

Signal name	Front display unit (M203)	AV control unit (M222)	Continuity
Signal VCC	3	47	Existed
Inverter VCC	2	59	

4. Check continuity between front display unit harness connector M203 and ground.

Signal name	Front display unit (M203)	—	Continuity
Signal VCC	3	Ground	Not existed
Inverter VCC	2	Ground	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK POWER SUPPLY CIRCUIT (AV CONTROL UNIT SIDE)

1. Connect the AV control unit harness connector.
2. Turn ignition switch ACC.
3. Check voltage between AV control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Signal VCC	M222	47	ACC	9 V
Inverter VCC		59		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replacement of AV control unit.

4.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector.
3. Check continuity between front display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M203	1	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

With Navigation

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between front display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M203	2	OFF	Battery voltage
ACC power supply		3	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between front display unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect front display unit connector.
3. Check continuity between front display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M203	1	OFF	Existed
		13		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

BOSE AMP.

BOSE AMP. : Diagnosis Procedure

INFOID:0000000004155718

BOSE 2CH SYSTEM (WITHOUT DVD PLAYER MODELS)

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	17, 18
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B108	50	OFF	Battery voltage
		51		
ACC power supply	B109	60	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between BOSE amp. and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector.
3. Check continuity between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B108	47	OFF	Existed
		52		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

BOSE SURROUND AUDIO 5.1CH SYSTEM (WITH DVD PLAYER MODELS)

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	17, 18
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B108	50	OFF	Battery voltage
		51		
ACC power supply	B107	16	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between BOSE amp. and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector.
3. Check continuity between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B108	47	OFF	Existed
		52		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

iPod ADAPTER

iPod ADAPTER : Diagnosis Procedure

INFOID:0000000004155719

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between iPod adapter harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M85	5	OFF	Battery voltage
ACC power supply	M85	3	ACC	Battery voltage

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check harness between iPod adapter and fuse.

CAMERA CONTROL UNIT

CAMERA CONTROL UNIT : Diagnosis Procedure

INFOID:0000000004155720

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between camera control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B481	32	OFF	Battery voltage
ACC power supply	B481	30	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between camera control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect camera control unit connector.
3. Check continuity between camera control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B481	31	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

DVD PLAYER

DVD PLAYER : Diagnosis Procedure

INFOID:0000000004155721

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between DVD player harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M272	1	OFF	Battery voltage
ACC power supply	M272	2	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between DVD player and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect DVD player connector.
3. Check continuity between DVD player harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M272	17	OFF	Existed
	M292	49		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

MULTIFUNCTION SWITCH

MULTIFUNCTION SWITCH : Diagnosis Procedure

INFOID:0000000004155722

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery power supply	37
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between multifunction switch harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M69	1	OFF	Battery voltage
ACC power supply	M69	2	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between multifunction switch and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect multifunction switch connector.
3. Check continuity between multifunction switch harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M69	14	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

SATELLITE RADIO TUNER

SATELLITE RADIO TUNER : Diagnosis Procedure

INFOID:0000000004155723

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between satellite radio tuner harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B461	12	OFF	Battery voltage
ACC power supply	B461	16	ACC	

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check harness between satellite radio tuner and fuse.

TEL ADAPTER UNIT

TEL ADAPTER UNIT : Diagnosis Procedure

INFOID:0000000004155724

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6
Ignition switch ON or START	12

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M55	1	OFF	Battery voltage
ACC power supply		2	ACC	
Ignition signal		3	ON	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between TEL adapter unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector.
3. Check continuity between TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M55	4, 14, 19, 21, 23, 24	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

RGB (R: RED) SIGNAL CIRCUIT (AV CONTROL UNIT TO FRONT DISPLAY UNIT)

WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155725

Transmit the image displayed with AV control unit with RGB image signal to the front display unit.

WITHOUT NAVIGATION : Diagnosis Procedure

INFOID:0000000004155726

1.CHECK CONTINUITY RGB (R: RED) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 17 and AV control unit harness connector terminal 40.

17 - 40 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 17 and ground.

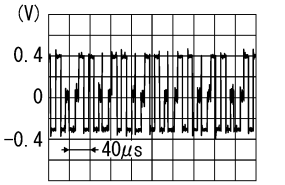
17 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (R: RED) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 17 and ground.

Terminal	Condition		Reference value
17 - Ground	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 SKIB2238J

Is the inspection result normal?

YES >> Replace display unit.
NO >> Replace AV control unit.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155727

Transmit the image displayed with AV control unit with RGB image signal to the front display unit.

WITH NAVIGATION : Diagnosis Procedure

INFOID:0000000004155728

1.CHECK CONTINUITY RGB (R: RED) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 17 and AV control unit harness connector terminal 93.

17 - 93 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 17 and ground.

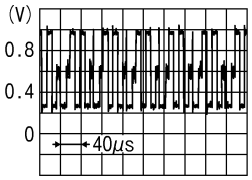
17 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK RGB (R: RED) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 17 and ground.

Terminal	Condition		Reference value
17 - Ground	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1029ZZ

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

RGB (G: GREEN) SIGNAL CIRCUIT (AV CONTROL UNIT TO FRONT DISPLAY UNIT)

WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155729

Transmit the image displayed with AV control unit with RGB image signal to the front display unit.

WITHOUT NAVIGATION : Diagnosis Procedure

INFOID:0000000004155730

1.CHECK CONTINUITY RGB (G: GREEN) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 6 and AV control unit harness connector terminal 39.

6 - 39 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 6 and ground.

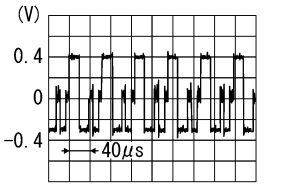
6 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (G: GREEN) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 6 and ground.

Terminal	Condition		Reference value
6 - Ground	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 SKIB2236J

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155731

Transmit the image displayed with AV control unit with RGB image signal to the front display unit.

WITH NAVIGATION : Diagnosis Procedure

INFOID:0000000004155732

1.CHECK CONTINUITY RGB (G: GREEN) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 6 and AV control unit harness connector terminal 94.

6 - 94 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 6 and ground.

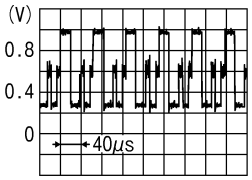
6 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK RGB (G: GREEN) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 6 and ground.

Terminal	Condition		Reference value
6 - Ground	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1030ZZ

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

RGB (B: BLUE) SIGNAL CIRCUIT (AV CONTROL UNIT TO FRONT DISPLAY UNIT)

WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155733

Transmit the image displayed with AV control unit with RGB image signal to the front display unit.

WITHOUT NAVIGATION : Diagnosis Procedure

INFOID:0000000004155734

1.CHECK CONTINUITY RGB (B: BLUE) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 18 and AV control unit harness connector terminal 38.

18 - 38 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 18 and ground.

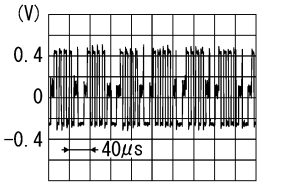
18 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (B: BLUE) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 18 and ground.

Terminal	Condition		Reference value
18 - Ground	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	

SKIB2237J

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155735

Transmit the image displayed with AV control unit with RGB image signal to the front display unit.

WITH NAVIGATION : Diagnosis Procedure

INFOID:0000000004155736

1.CHECK CONTINUITY RGB (B: BLUE) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 18 and AV control unit harness connector terminal 95.

18 - 95 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 18 and ground.

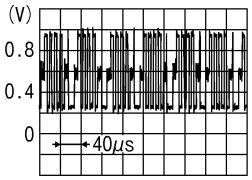
18 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK RGB (B: BLUE) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 18 and ground.

Terminal	Condition		Reference value
18 - Ground	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1031ZZ

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

RGB SYNCHRONIZING SIGNAL CIRCUIT

WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155737

Transmit the RGB synchronizing signal to the front display unit so as to synchronize the RGB image displayed with AV control unit.

WITHOUT NAVIGATION : Diagnosis Procedure

INFOID:0000000004155738

1.CHECK CONTINUITY RGB SYNCHRONIZING SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 19 and AV control unit harness connector terminal 41.

19 - 41 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 19 and ground.

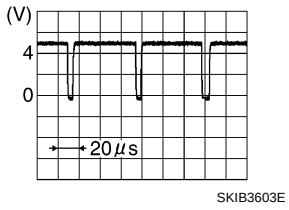
19 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB SYNCHRONIZING SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 19 and ground.

19 - Ground	 SKIB3603E

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155739

Transmit the RGB synchronizing signal to the front display unit so as to synchronize the RGB image displayed with AV control unit.

WITH NAVIGATION : Diagnosis Procedure

INFOID:0000000004155740

1.CHECK CONTINUITY RGB SYNCHRONIZING SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 19 and AV control unit harness connector terminal 97.

19 - 97 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 19 and ground.

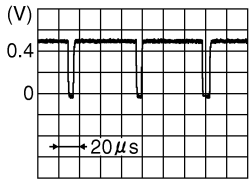
19 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB SYNCHRONIZING SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 19 and ground.

19 - Ground	 JPNIA0461GB

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

RGB AREA (YS) SIGNAL CIRCUIT (AV CONTROL UNIT TO FRONT DISPLAY UNIT)

WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155741

Transmits the display area of RGB image displayed by AV control unit with RGB area (YS) signal to front display unit.

WITHOUT NAVIGATION : Diagnosis Procedure

INFOID:0000000004155742

1.CHECK CONTINUITY RGB AREA (YS) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 9 and AV control unit harness connector terminal 43.

9 - 43 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 9 and ground.

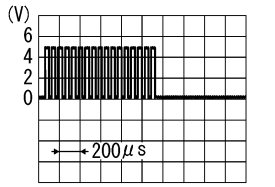
9 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB AREA (YS) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 9 and ground.

Terminal	Condition		Reference value
9 - Ground	Ignition switch ON	When RGB image is displayed.	Approx. 5 V
		When AUX image is displayed.	

PKIB4948J

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155743

Transmits the front display area of RGB image displayed by AV control unit with RGB area (YS) signal to front display unit.

WITH NAVIGATION : Diagnosis Procedure

INFOID:0000000004155744

1.CHECK CONTINUITY RGB AREA (YS) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.

3. Check continuity between front display unit harness connector terminal 9 and AV control unit harness connector terminal 99.

9 - 99 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 9 and ground.

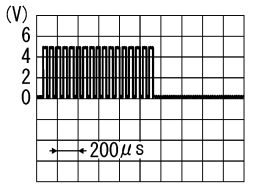
9 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK RGB AREA (YS) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 9 and ground.

Terminal	Condition		Reference value
9 - Ground	Ignition switch ON	When RGB image is displayed.	Approx. 5 V
		When rear view camera image is displayed.	 PKIB4948J

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

HP SIGNAL CIRCUIT (FRONT DISPLAY UNIT TO AV CONTROL UNIT) WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155745

In composite image (AUX image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from front display unit to AV control unit so as to synchronize the RGB images displayed with AV control unit such as the image quality adjusting menu, etc.

WITHOUT NAVIGATION : Diagnosis Procedure

INFOID:0000000004155746

1.CHECK CONTINUITY HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 8 and AV control unit harness connector terminal 45.

8 - 45 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 8 and ground.

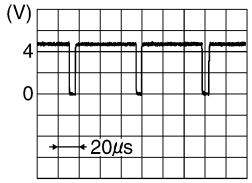
8 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HORIZONTAL SYNCHRONIZING (HP) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 8 and ground.

8 - Ground	 SKIB3601E

Is the inspection result normal?

YES >> Replace AV control unit.
NO >> Replace front display unit.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155747

In composite image (DVD and AUX images, camera image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from front display unit to AV control unit so as to synchronize the RGB images displayed with AV control unit such as the image quality adjusting menu, etc.

WITH NAVIGATION : Diagnosis Procedure

INFOID:0000000004155748

1.CHECK CONTINUITY HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 8 and AV control unit harness connector terminal 100.

8 - 100 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 8 and ground.

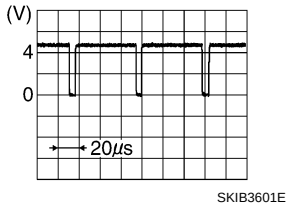
8 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HORIZONTAL SYNCHRONIZING (HP) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 8 and ground.

8 - Ground	 SKIB3601E

Is the inspection result normal?

YES >> Replace AV control unit.
NO >> Replace front display unit.

VP SIGNAL CIRCUIT (FRONT DISPLAY UNIT TO AV CONTROL UNIT) WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155749

In composite image (AUX image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from front display unit to AV control unit so as to synchronize the RGB images displayed with AV control unit such as the image quality adjusting menu, etc.

WITHOUT NAVIGATION : Diagnosis Procedure

INFOID:0000000004155750

1.CHECK CONTINUITY VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 20 and AV control unit harness connector terminal 57.

20 - 57 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 20 and ground.

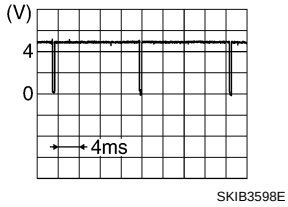
20 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VERTICAL SYNCHRONIZING (VP) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 20 and ground.

20 - Ground	 SKIB3598E

Is the inspection result normal?

YES >> Replace AV control unit.
NO >> Replace front display unit.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155751

In composite image (DVD and AUX images, camera image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from front display unit to AV control unit so as to synchronize the RGB images displayed with AV control unit such as the image quality adjusting menu, etc.

WITH NAVIGATION : Diagnosis Procedure

INFOID:0000000004155752

1.CHECK CONTINUITY VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 20 and AV control unit harness connector terminal 101.

20 - 101 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 20 and ground.

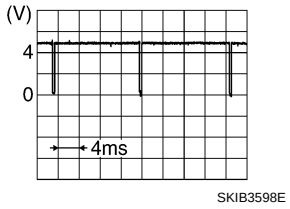
20 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VERTICAL SYNCHRONIZING (VP) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 20 and ground.

20 - Ground	 SKIB3598E

Is the inspection result normal?

YES >> Replace AV control unit.
NO >> Replace front display unit.

AUX IMAGE SIGNAL CIRCUIT
WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155753

- Transmits the image signal of AUX device from auxiliary input jacks to AV control unit.
- AV control unit transmits the image signal that is input to the front display unit.

WITHOUT NAVIGATION : Diagnosis Procedure

INFOID:0000000004155754

1.CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT (AUX INPUT JACKS AND AV CONTROL UNIT)

1. Turn ignition switch OFF.
2. Disconnect auxiliary input jacks connector and AV control unit connector.
3. Check continuity between auxiliary input jacks harness connector terminal 7, 8 and AV control unit harness connector terminal 66, 74.

7 - 66 : Continuity should exist.
8 - 74 : Continuity should exist.

4. Check continuity between auxiliary input jacks harness connector terminal 7, 8 and ground.

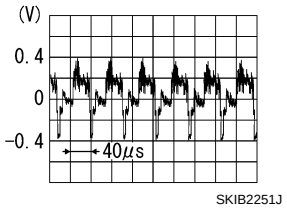
7, 8 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AUX IMAGE SIGNAL (AUX INPUT JACKS TO AV CONTROL UNIT)

1. Connect auxiliary connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between auxiliary input jacks harness connector terminal 7 and 8.

Terminal	Condition		Reference value
7 - 8	Ignition switch ON	when AUX image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check that there is no malfunction in the external device.

3.CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT (AV CONTROL UNIT AND FRONT DISPLAY UNIT)

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 15 and AV control unit harness connector terminal 36.

15 - 36 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 15 and ground.

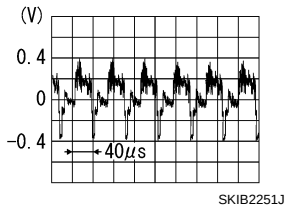
15 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK AUX IMAGE SIGNAL

1. Connect AV control unit connector and front display unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 15 and ground.

Terminal	Condition		Reference value
15 - Ground	Ignition switch ON	When AUX image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155755

- Transmits the image signal of external device from auxiliary input jacks to front display unit. (without DVD player models)
- Transmits the image signal of external device from auxiliary input jacks to DVD player. (with DVD player models)

WITH NAVIGATION : Diagnosis Procedure

INFOID:0000000004155756

WITHOUT DVD PLAYER MODELS

1.CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect auxiliary input jacks connector and front display unit connector.
3. Check continuity between auxiliary input jacks harness connector terminal 7 and front display unit harness connector terminal 15.

7 - 15 : Continuity should exist.

4. Check continuity between auxiliary input jacks harness connector terminal 8 and front display harness connector terminal 5.

8 - 5 : Continuity should exist.

5. Check continuity between auxiliary input jacks harness connector terminal 7 and ground.

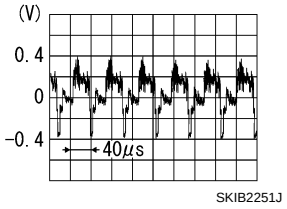
7 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AUX IMAGE SIGNAL

1. Connect auxiliary input jacks connector and front display unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 5 and 15.

Terminal	Condition		Reference value
5 - 15	Ignition switch ON	When AUX image is displayed.	 SKIB2251J

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Check that there is no malfunction in the external device.

WITH DVD PLAYER MODELS

1. CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect auxiliary input jacks connector and DVD player connector.
3. Check continuity between auxiliary input jacks harness connector terminal 7 and DVD player harness connector terminal 4.

7 - 4 : Continuity should exist.

4. Check continuity between auxiliary input jacks harness connector terminal 8 and DVD player harness connector terminal 5.

8 - 5 : Continuity should exist.

5. Check continuity between auxiliary input jacks harness connector terminal 7 and ground.

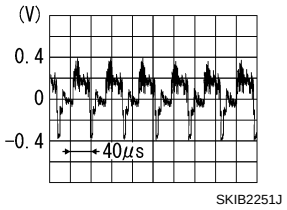
7 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK AUX IMAGE SIGNAL

1. Connect auxiliary input jacks connector and DVD player connector.
2. Turn ignition switch ON.
3. Check signal between DVD player harness connector terminal 4 and 5.

Terminal	Condition		Reference value
4 - 5	Ignition switch ON	When AUX image is displayed.	 SKIB2251J

Is the inspection result normal?

YES >> Replace DVD player.
NO >> Check that there is no malfunction in the external device.

COMPOSITE IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000004155757

DVD player transmits the playback DVD image signal and the input AUX image signal to the front display unit.

Diagnosis Procedure

INFOID:0000000004155758

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect DVD player connector and front display unit connector.
3. Check continuity between DVD player harness connector terminal 20 and front display unit harness connector terminal 15.

20 - 15 : Continuity should exist.

4. Check continuity between DVD player harness connector terminal 19 and front display unit harness connector terminal 5.

19 - 5 : Continuity should exist.

5. Check continuity between front display unit harness connector terminal 15 and ground.

15 - Ground : Continuity should not exist.

6. Check continuity between front display unit harness connector terminal 5 and ground.

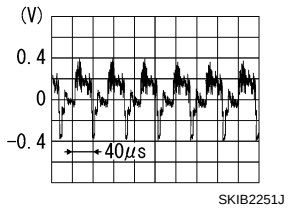
5 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMPOSITE IMAGE SIGNAL

1. Connect DVD player connector and front display unit connector.
2. Turn ignition switch ON.
3. Check signal between front display harness connector terminal 15 and 5.

Terminal	Condition		Reference value
15 - 5	Ignition switch ON	When AUX or DVD image is displayed on front display.	

SKIB2251J

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace DVD player.

MICROPHONE SIGNAL CIRCUIT
WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155759

Supply power from TEL adapter unit to microphone. The microphone transmits the sound/voice to the microphone.

WITHOUT NAVIGATION : Diagnosis Procedure

INFOID:0000000004155760

1.CHECK CONTINUITY BETWEEN TEL ADAPTER UNIT AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector and microphone connector.
3. Check continuity between TEL adapter unit harness connector terminals 7, 8, 29 and microphone harness connector terminals 1, 2, 4.

7 - 1 : Continuity should exist.
8 - 2 : Continuity should exist.
29 - 4 : Continuity should exist.

4. Check continuity between TEL adapter unit harness connector terminals 7, 29 and ground.

7, 29 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE VCC

1. Connect TEL adapter unit connector.
2. Turn ignition switch ON.
3. Check voltage between TEL adapter unit harness connector terminal 29 and 8.

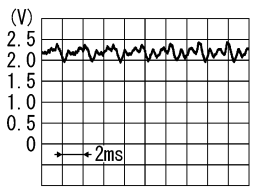
29 - 8 : Approx. 5 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace TEL adapter unit.

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between TEL adapter unit harness connector terminals 7 and 8.

Terminal	Condition		Reference value
7 - 8	Ignition switch ON	Give a voice.	

PKIB5037J

Is the inspection result normal?

YES >> Replace TEL adapter unit.
NO >> Replace microphone.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155761

Supply power from AV control unit to microphone. The microphone transmits the sound/voice to the AV control unit.

WITH NAVIGATION : Diagnosis Procedure

INFOID:0000000004155762

1.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and microphone connector.
3. Check continuity between AV control unit harness connector terminals 26, 27, 28 and microphone harness connector terminals 4, 2, 1.

26 - 4 : Continuity should exist.
27 - 2 : Continuity should exist.
28 - 1 : Continuity should exist.

4. Check continuity between AV control unit harness connector terminals 26, 28 and ground.

26, 28 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE VCC

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector terminals 26 and 27.

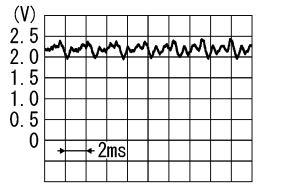
26 - 27 : Approx. 5 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit.

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between AV control unit harness connector terminals 28 and 27.

Terminal	Condition		Reference value
28 - 27	Ignition switch ON	Give a voice.	

PKIB5037J

Is the inspection result normal?

YES >> Replace AV control unit.
NO >> Replace microphone.

AUDIOPILOT® MICROPHONE

BOSE AUDIO 2CH SYSTEM

BOSE AUDIO 2CH SYSTEM : Description

INFOID:0000000004155763

The microphone transmits the microphone signal to the BOSE amp.

BOSE AUDIO 2CH SYSTEM : Diagnosis Procedure

INFOID:0000000004155764

1.CHECK CONTINUITY BETWEEN BOSE AMP. AND AUDIOPILOT® MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector and AudioPilot®microphone connector.
3. Check continuity between BOSE amp. harness connector terminals 25, 26 and AudioPilot®microphone harness connector terminals 1, 2.

25 - 1 : Continuity should exist.
26 - 2 : Continuity should exist.

4. Check continuity between BOSE amp. harness connector terminals 25, 26 and ground.

25, 26 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE VCC

1. Connect BOSE amp. connector.
2. Turn ignition switch ON.
3. Check voltage between BOSE amp. harness connector terminals 25 and ground.

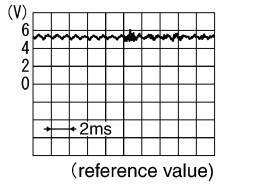
25 - Ground : Approx. 5 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BOSE amp.

3.CHECK MICROPHONE SIGNAL

1. Turn ignition switch OFF.
2. Connect AudioPilot®microphone connector.
3. Turn ignition switch ON.
4. Check signal between BOSE amp. harness connector terminals 25 and 26.

Terminal	Condition		Reference value
25 - 26	Ignition switch ON	When inputting noise.	

(reference value)

PKIA2104E

Is the inspection result normal?

YES >> Replace BOSE amp.
NO >> Replace AudioPilot®microphone.

BOSE SURROUND AUDIO 5.1CH SYSTEM

BOSE SURROUND AUDIO 5.1CH SYSTEM : Description

INFOID:0000000004155765

The microphone transmits the microphone signal to the BOSE amp.

BOSE SURROUND AUDIO 5.1CH SYSTEM : Diagnosis Procedure

INFOID:0000000004155766

1. CHECK CONTINUITY BETWEEN BOSE AMP. AND AUDIOPILOT® MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector and AudioPilot®microphone connector.
3. Check continuity between BOSE amp. harness connector terminals 31, 11 and AudioPilot®microphone harness connector terminals 1, 2.

31 - 1 : Continuity should exist.
11 - 2 : Continuity should exist.

4. Check continuity between BOSE amp. harness connector terminals 31, 11 and ground.

31, 11 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK VOLTAGE MICROPHONE VCC

1. Connect BOSE amp. connector.
2. Turn ignition switch ON.
3. Check voltage between BOSE amp. harness connector terminals 31 and ground.

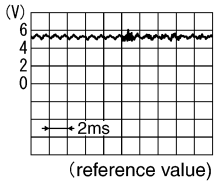
31 - Ground : Approx. 5 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BOSE amp.

3. CHECK MICROPHONE SIGNAL

1. Turn ignition switch OFF.
2. Connect AudioPilot®microphone connector.
3. Turn ignition switch ON.
4. Check signal between BOSE amp. harness connector terminals 31 and 11.

Terminal	Condition		Reference value
31 - 11	Ignition switch ON	When inputting noise.	 (reference value) PKIA2104E

Is the inspection result normal?

YES >> Replace BOSE amp.
NO >> Replace AudioPilot®microphone.

CONTROL SIGNAL CIRCUIT

Description

INFOID:0000000004155767

TEL adapter unit identifies the vehicle model according to the control signal and performs the control.

Diagnosis Procedure

INFOID:0000000004155768

1.CHECK CONTINUITY CONTROL SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector.
3. Check continuity between TEL adapter unit harness connector terminals 21, 23, 24 and ground.

21, 23, 24 - Ground : Continuity should exist.

Is the inspection result normal?

YES >> Replace TEL adapter unit.
NO >> Repair harness or connector.

CAMERA IMAGE SIGNAL CIRCUIT (REAR VIEW CAMERA TO CAMERA CONTROL UNIT)

Description

INFOID:0000000004155769

- Camera control unit outputs camera ON signal to rear view camera and inputs rear view camera image signal from rear view camera when the reverse signal is input.
- The camera control unit that inputs the camera image signal transmits the camera image signal to the front display unit.

Diagnosis Procedure

INFOID:0000000004155770

1. CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect camera control unit connector and rear view camera connector.
3. Check continuity between camera control unit harness connector terminal 6, 5 and rear view camera harness connector terminal 3, 4.

5 - 4 : Continuity should exist.
6 - 3 : Continuity should exist.

4. Check continuity between camera control unit harness connector terminal 6 and ground.

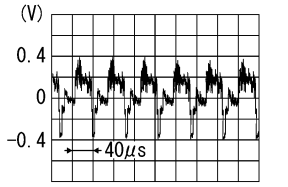
6 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK CAMERA IMAGE SIGNAL

1. Connect camera control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Check signal between camera control unit harness connector terminal 6 and 5.

Terminal	Condition		Reference value
6 - 5	Ignition switch ON	When rear view camera image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace camera control unit.
NO >> Replace rear view camera.

CAMERA ON SIGNAL CIRCUIT

Description

INFOID:0000000004155771

- Camera control unit outputs camera ON signal to rear view camera and inputs rear view camera image signal from rear view camera when the reverse signal is input.
- The camera control unit that inputs the camera image signal transmits the camera image signal to the front display unit.

Diagnosis Procedure

INFOID:0000000004155772

1.CHECK CONTINUITY CAMERA ON SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect camera control unit connector and rear view camera connector.
3. Check continuity between camera control unit harness connector terminal 8 and rear view camera harness connector terminal 1.

8 - 1 : Continuity should exist.

4. Check continuity between camera control unit harness connector terminal 8 and ground.

8 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE CAMERA ON SIGNAL

1. Connect camera control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Check signal between camera control unit harness connector terminal 8 and ground.

8 - Ground : Shift the selector lever to “R” position : Approx. 6 V

Is the inspection result normal?

YES >> Replace rear view camera.
NO >> Replace camera control unit.

CAMERA IMAGE SIGNAL CIRCUIT (CAMERA CONTROL UNIT TO FRONT DISPLAY UNIT)

Description

INFOID:0000000004155773

- Camera control unit outputs camera ON signal to rear view camera and inputs rear view camera image signal from rear view camera when the reverse signal is input.
- The camera control unit that inputs the camera image signal transmits the camera image signal to the front display unit.

Diagnosis Procedure

INFOID:0000000004155774

1.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect camera control unit connector and front display unit connector.
3. Check continuity between camera control unit harness connector terminal 12 and display unit harness connector terminal 12.

12 - 12 : Continuity should exist.

4. Check continuity between camera control unit harness connector terminal 12 and ground.

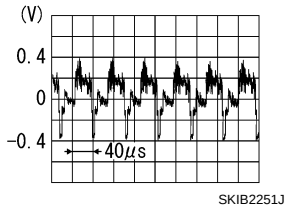
12 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK CAMERA IMAGE SIGNAL

1. Connect camera control unit connector and front display unit connector.
2. Turn ignition switch ON.
3. Check signal between camera control unit harness connector terminal 12 and ground.

Terminal	Condition		Reference value
12 - Ground	Ignition switch ON	When rear view camera image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace display unit.
NO >> Replace camera control unit.

STEERING SWITCH SIGNAL A CIRCUIT WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155775

Transmits the steering switch signal to AV control unit.

WITHOUT NAVIGATION : Diagnosis Procedure

INFOID:0000000004155776

1.CHECK STEERING SWITCH SIGNAL A CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector terminal 6 and spiral cable harness connector terminal 33.

6 - 33 : Continuity should exist.

3. Check continuity between AV control unit harness connector terminals 6 and ground.

6 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable.

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector terminals 6 and 15.

6 - 15 : Approx. 3.3 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit.

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-148, "WITHOUT NAVIGATION : Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch.

WITHOUT NAVIGATION : Component Inspection

INFOID:0000000004155777

Measure the resistance between the steering switch connector terminals 20 to 17 and 19 to 17.

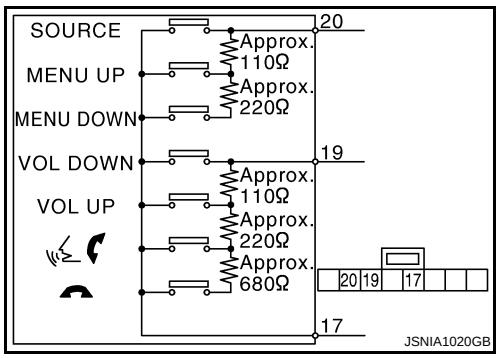
Standard

Between terminals 20 and 17

MENU DOWN switch ON	**: 323 – 337 Ω**
MENU UP switch ON	**: 108 – 112 Ω**
SOURCE switch ON	**: 0 Ω**

Between terminals 19 and 17

switch ON	**: 990 – 1030 Ω**
switch ON	**: 323 – 337 Ω**
VOL UP switch ON	**: 108 – 112 Ω**
VOL DOWN switch ON	**: 0 Ω**



WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155778

Transmits the steering switch signal to AV control unit.

WITH NAVIGATION : Diagnosis Procedure

INFOID:0000000004155779

1.CHECK STEERING SWITCH SIGNAL A CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and spiral cable connector.
3. Check continuity between AV control unit harness connector terminal 6 and spiral cable harness connector terminal 33.

6 - 33 : Continuity should exist.

4. Check continuity between AV control unit harness connector terminals 6 and ground.

6 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable.

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector terminals 6 and 15.

6 - 15 : Approx. 5 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit.

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-150, "WITH NAVIGATION : Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch.

WITH NAVIGATION : Component Inspection

INFOID:0000000004155780

Measure the resistance between the steering switch connector terminals 20 to 17 and 19 to 17.

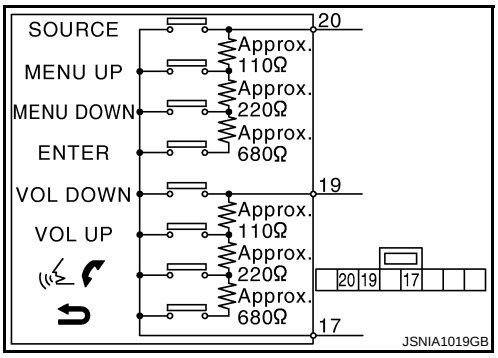
Standard

Between terminals 20 and 17

ENTER switch ON	**: 990 – 1030 Ω**
MENU DOWN switch ON	**: 323 – 337 Ω**
MENU UP switch ON	**: 108 – 112 Ω**
SOURCE switch ON	**: 0 Ω**

Between terminals 19 and 17

switch ON	**: 990 – 1030 Ω**
switch ON	**: 323 – 337 Ω**
VOL UP switch ON	**: 108 – 112 Ω**
VOL DOWN switch ON	**: 0 Ω**



STEERING SWITCH SIGNAL B CIRCUIT
WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155781

Transmits the steering switch signal to AV control unit.

WITHOUT NAVIGATION : Diagnosis Procedure

INFOID:0000000004155782

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector terminal 16 and spiral cable harness connector terminals 32.

16 - 32 : Continuity should exist.

3. Check continuity between AV control unit harness connector terminal 16 and ground.

16 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable.

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector terminals 16 and 15.

16 - 15 : Approx. 3.3 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit.

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-151, "WITHOUT NAVIGATION : Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch.

WITHOUT NAVIGATION : Component Inspection

INFOID:0000000004155783

Measure the resistance between the steering switch connector terminals 20 to 17 and 19 to 17.

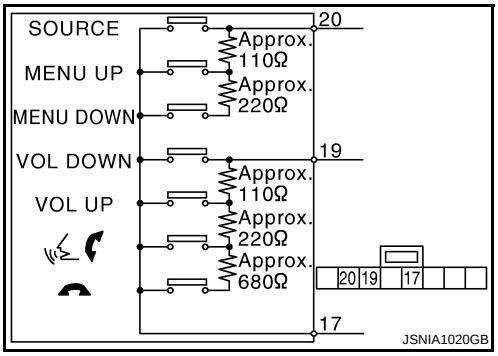
Standard

Between terminals 20 and 17

MENU DOWN switch ON	**: 323 – 337 Ω**
MENU UP switch ON	**: 108 – 112 Ω**
SOURCE switch ON	**: 0 Ω**

Between terminals 19 and 17

switch ON	**: 990 – 1030 Ω**
switch ON	**: 323 – 337 Ω**
VOL UP switch ON	**: 108 – 112 Ω**
VOL DOWN switch ON	**: 0 Ω**



WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155784

Transmits the steering switch signal to AV control unit.

WITH NAVIGATION : Diagnosis Procedure

INFOID:0000000004155785

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and spiral cable connector.
3. Check continuity between AV control unit harness connector terminal 16 and spiral cable harness connector terminals 32.

16 - 32 : Continuity should exist.

4. Check continuity between AV control unit harness connector terminal 16 and ground.

16 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable.

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector terminals 16 and 15.

16 - 15 : Approx. 5 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit.

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-153, "WITH NAVIGATION : Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch.

WITH NAVIGATION : Component Inspection

INFOID:0000000004155786

Measure the resistance between the steering switch connector terminals 20 to 17 and 19 to 17.

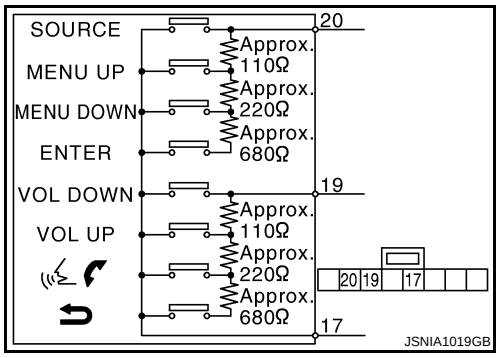
Standard

Between terminals 20 and 17

ENTER switch ON	**: 990 – 1030 Ω**
MENU DOWN switch ON	**: 323 – 337 Ω**
MENU UP switch ON	**: 108 – 112 Ω**
SOURCE switch ON	**: 0 Ω**

Between terminals 19 and 17

switch ON	**: 990 – 1030 Ω**
switch ON	**: 323 – 337 Ω**
VOL UP switch ON	**: 108 – 112 Ω**
VOL DOWN switch ON	**: 0 Ω**



STEERING SWITCH SIGNAL GND CIRCUIT
WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155787

Transmits the steering switch signal to AV control unit.

WITHOUT NAVIGATION : Diagnosis Procedure

INFOID:0000000004155788

1.CHECK STEERING SWITCH SIGNAL GND CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector terminal 15 and spiral cable harness connector terminal 27.

15 - 27 : Continuity should exist.

3. Connect AV control unit connector.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable.

3.CHECK GROUND CIRCUIT

1. Connect AV control unit connector.
2. Check continuity between AV control unit harness connector terminal 15 and ground.

15 - Ground : Continuity should exist.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit.

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-154, "WITHOUT NAVIGATION : Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch.

WITHOUT NAVIGATION : Component Inspection

INFOID:0000000004155789

Measure the resistance between the steering switch connector terminals 20 to 17 and 19 to 17.

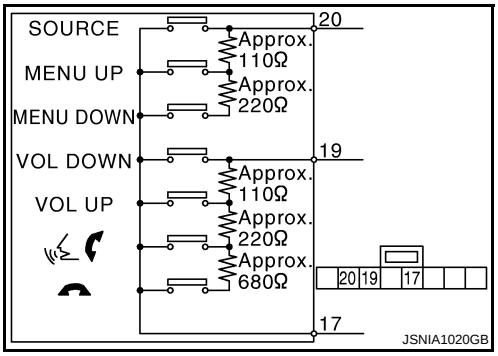
Standard

Between terminals 20 and 17

MENU DOWN switch ON : 323 – 337 Ω
MENU UP switch ON : 108 – 112 Ω
SOURCE switch ON : 0 Ω

Between terminals 19 and 17

switch ON : 990 – 1030 Ω
switch ON : 323 – 337 Ω



VOL UP switch ON : 108 – 112 Ω
VOL DOWN switch ON : 0 Ω

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155790

Transmits the steering switch signal to AV control unit.

WITH NAVIGATION : Diagnosis Procedure

INFOID:0000000004155791

1.CHECK STEERING SWITCH SIGNAL GND CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector terminal 15 and spiral cable harness connector terminal 27.

15 - 27 : Continuity should exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable.

3.CHECK GROUND CIRCUIT

1. Connect AV control unit connector.
2. Check continuity between AV control unit harness connector terminal 15 and ground.

15 - Ground : Continuity should exist.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit.

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-155, "WITH NAVIGATION : Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch.

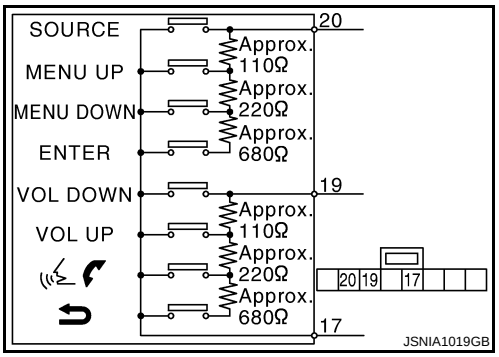
WITH NAVIGATION : Component Inspection

INFOID:0000000004155792

Measure the resistance between the steering switch connector terminals 20 to 17 and 19 to 17.

Standard

Between terminals 20 and 17
ENTER switch ON : 990 – 1030 Ω
MENU DOWN switch ON : 323 – 337 Ω
MENU UP switch ON : 108 – 112 Ω
SOURCE switch ON : 0 Ω
Between terminals 19 and 17
↩ switch ON : 990 – 1030 Ω
📞 switch ON : 323 – 337 Ω



VOL UP switch ON **: 108 – 112 Ω**

VOL DOWN switch ON **: 0 Ω**

ECU DIAGNOSIS

AV CONTROL UNIT
WITHOUT NAVIGATION

WITHOUT NAVIGATION : Reference Value

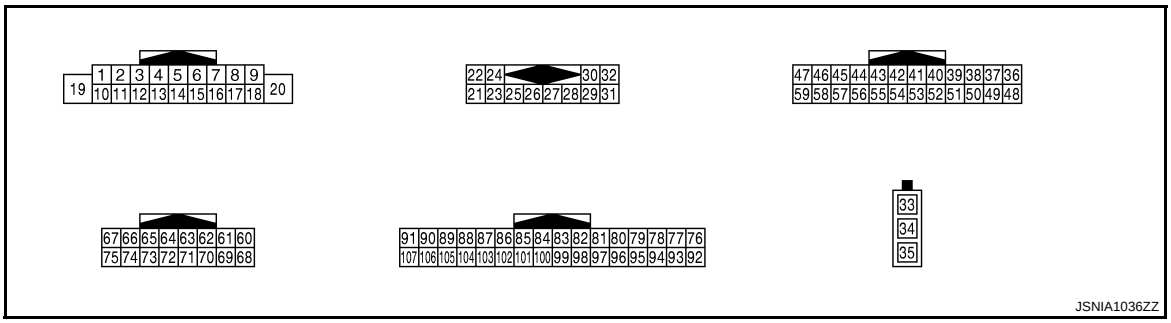
INFOID:0000000004155793

VALUES ON THE DIAGNOSIS TOOL

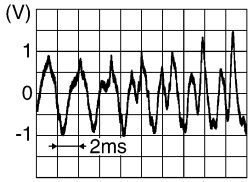
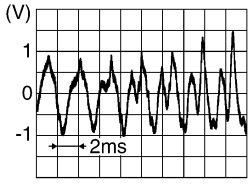
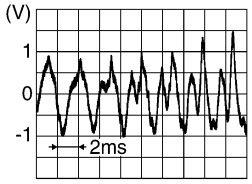
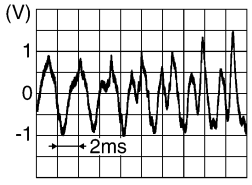
CONSULT-III MONITOR ITEM

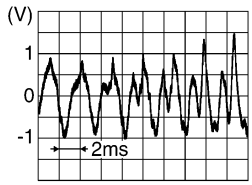
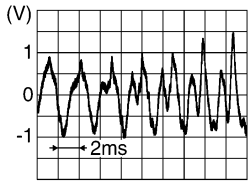
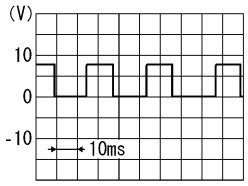
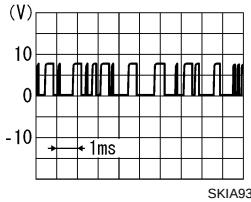
Display Item	Display	Vehicle status	Remarks
VHCL SPD SIG	On	Vehicle speed >0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed =0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	Changes in indication may be delayed. This is normal.
	Off	Parking brake is released.	
ILLUM SIG	On	Light switch ON.	—
	Off	Light switch OFF.	
IGN SIG	On	Ignition switch ON.	—
	Off	Ignition switch in ACC position.	
REV SIG	On	Shift the selector lever to “R” position.	Changes in indication may be delayed. This is normal.
	Off	Shift the selector lever other than “R” position.	

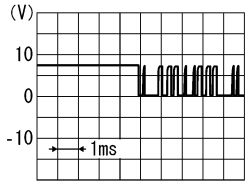
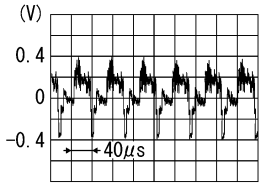
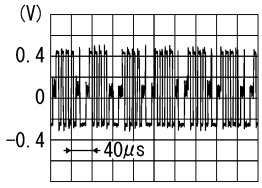
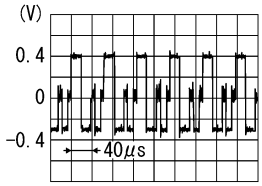
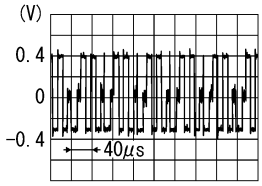
TERMINAL LAYOUT

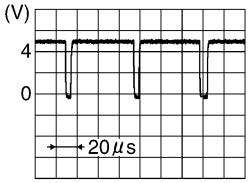
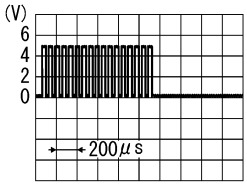
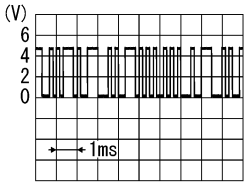
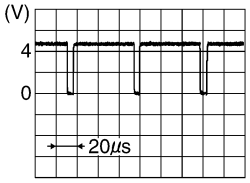
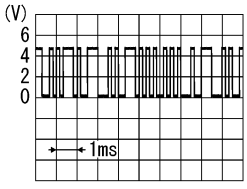


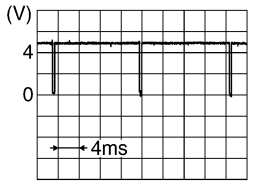
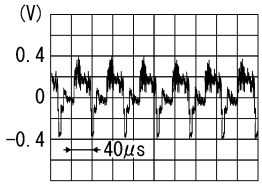
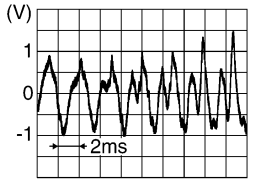
PHYSICAL VALUES

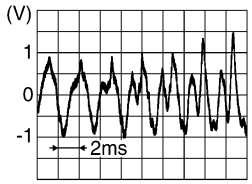
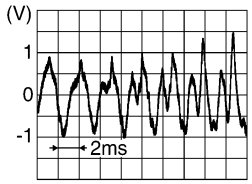
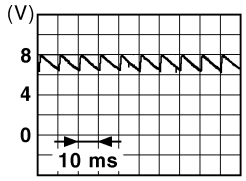
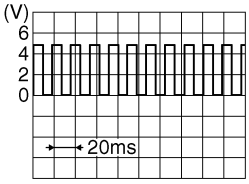
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
2 (P)	3 (W)	Sound signal front LH	Output	Ignition switch ON	Audio sound output.	 SKIB3609E
4 (LG)	5 (B/Y)	Sound signal rear LH	Output	Ignition switch ON	Audio sound output.	 SKIB3609E
6 (BR)	15 (G)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing △ switch.	0.7 V
					Keep pressing ▽ switch.	1.3 V
					Except for above.	3.3 V
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
9 (LG)	Ground	Illumination signal	Input	Ignition switch OFF	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12 V
11 (BR)	12 (R)	Sound signal front RH	Output	Ignition switch ON	Audio sound output.	 SKIB3609E
13 (O)	14 (B/P)	Sound signal rear RH	Output	Ignition switch ON	Audio sound output.	 SKIB3609E
15 (G)	Ground	Steering switch signal ground	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
16 (O)	15 (G)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	0.7 V
					Keep pressing switch.	1.3 V
					Keep pressing switch.	2.2 V
					Except for above.	3.3 V
18 (R/Y)	Ground	Illumination control signal	Input	Ignition switch ON	Illumination control switch is operated by lighting switch in ON position.	Change between approx. 0 V and approx. 12 V
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
20 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
22 (R)	21 (G)	Satellite radio sound signal LH	Input	Ignition switch ON	When satellite radio mode is selected.	 SKIB3609E
24 (B)	23 (W)	Satellite radio sound signal RH	Input	Ignition switch ON	When satellite radio mode is selected.	 SKIB3609E
25	—	Shield	—	—	—	—
26	—	Shield	—	—	—	—
28 (B)	Ground	Request signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected.	 SKIA9299J
29 (R)	Ground	Communication signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected.	 SKIA9300J

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
30 (W)	Ground	Communication signal (CONT→SAT)	Output	Ignition switch ON	When satellite radio mode is selected.	 SKIA9301J
33	Ground	Antenna amp. ON signal	Output	Ignition switch ACC	—	12 V
34	—	AM–FM main	Input	—	—	—
35	—	FM sub	Input	—	—	—
36 (W)	37 (G)	AUX image signal	Output	Ignition switch ON	When AUX image is displayed.	 SKIB2251J
37 (G)	Ground	AUX image ground	—	Ignition switch ON	—	0 V
38 (Y)	Ground	RGB image signal (B: blue)	Output	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 SKIB2237J
39 (L)	Ground	RGB image signal (G: green)	Output	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 SKIB2236J
40 (G)	Ground	RGB image signal (R: red)	Output	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 SKIB2238J

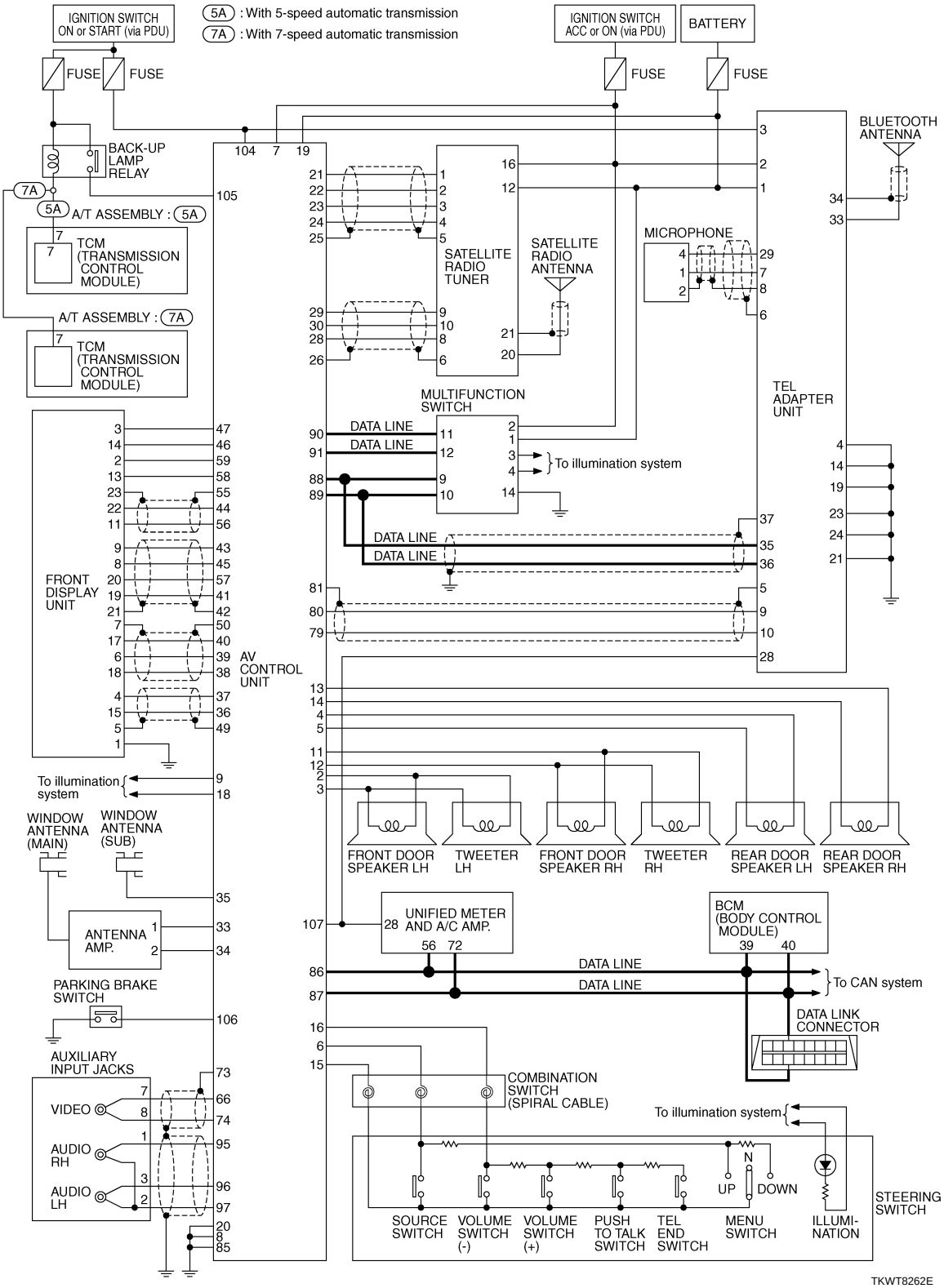
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
41 (B)	Ground	RGB synchronizing signal	Output	Ignition switch ON	—	 SKIB3603E
42	—	Shield	—	—	—	—
43 (G)	Ground	RGB area (YS) signal	Output	Ignition switch ON	When RGB image is displayed.	5 V
					When AUX image is displayed.	 PKIB4948J
44 (W/L)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
45 (W)	Ground	Horizontal synchronizing (HP) signal	Input	Ignition switch ON	—	 SKIB3601E
46 (O)	Ground	Signal GND	—	Ignition switch ON	—	0 V
47 (L)	Ground	Signal VCC	Output	Ignition switch ACC	—	9 V
49	—	Shield	—	—	—	—
50	—	Shield	—	—	—	—
55	—	Shield	—	—	—	—
56 (O/L)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
57 (R)	Ground	Vertical synchronizing (VP) signal	Input	Ignition switch ON	—	 SKIB3598E
58 (W/R)	Ground	Inverter GND	—	Ignition switch ON	—	0 V
59 (Y)	Ground	Inverter VCC	Output	Ignition switch ACC	—	9 V
66 (LG)	74 (V)	AUX image signal	Input	Ignition switch ON	At AUX image is displayed.	 SKIB2251J
73	—	Shield	—	—	—	—
74 (V)	Ground	AUX image signal ground	—	Ignition switch ON	—	0 V
80 (L)	79 (P)	TEL voice signal	Input	Ignition switch ON	During voice guide output with the switch pressed.	 SKIB3609E
81	—	Shield	—	—	—	—
85 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
86 (L)	—	CAN–H	Input/ Output	—	—	—
87 (P)	—	CAN–L	Input/ Output	—	—	—
88 (BR)	—	AV communication signal (H)	Input/ Output	—	—	—
89 (B/R)	—	AV communication signal (L)	Input/ Output	—	—	—
90 (W)	—	AV communication signal (H)	Input/ Output	—	—	—
91 (R)	—	AV communication signal (L)	Input/ Output	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
95 (R)	97 (B)	AUX sound signal RH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
96 (BR)	97 (B)	AUX sound signal LH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
97 (B)	Ground	AUX sound signal ground	—	Ignition switch ON	—	0 V
104 (YG)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
105 (O)	Ground	Reverse signal	Input	Ignition switch ON	R position.	12 V
					Other than R position.	0 V
106 (P)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake ON.	0 V
					Parking brake OFF.	 JSNIA0007GB
107 (G)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH).	**NOTE:** Maximum voltage may be 12 V due to specifications (connected units).  SKIA6649J

WITHOUT NAVIGATION : Schematic - Base Audio System -

INFOID:0000000004155794



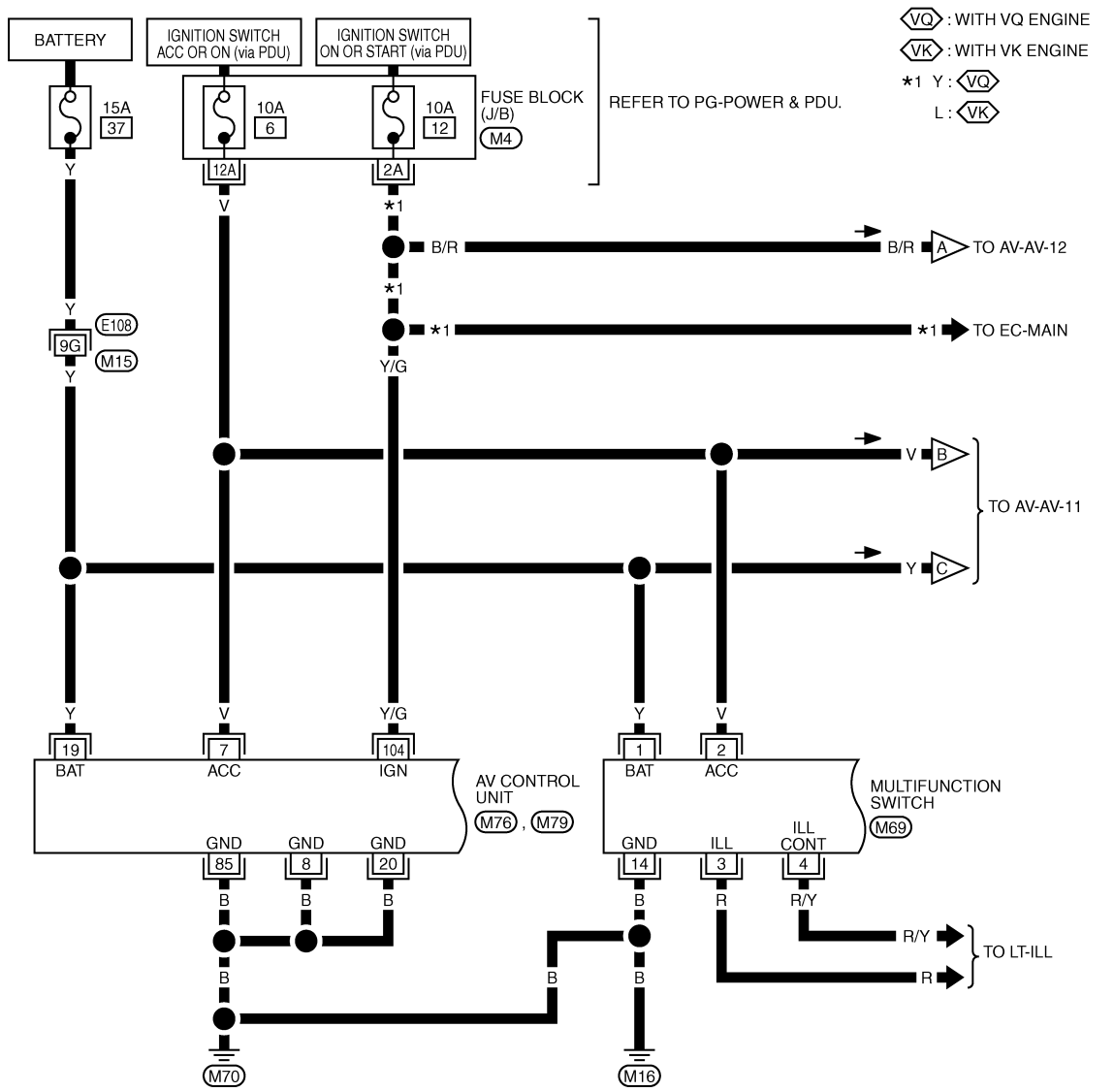
WITHOUT NAVIGATION : Wiring Diagram - AV - / Base Audio System

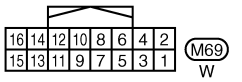
INFOID:0000000004155795

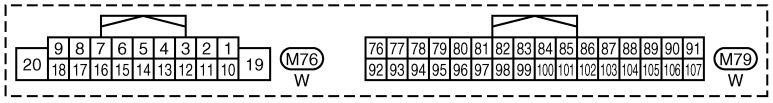
NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

AV-AV-01



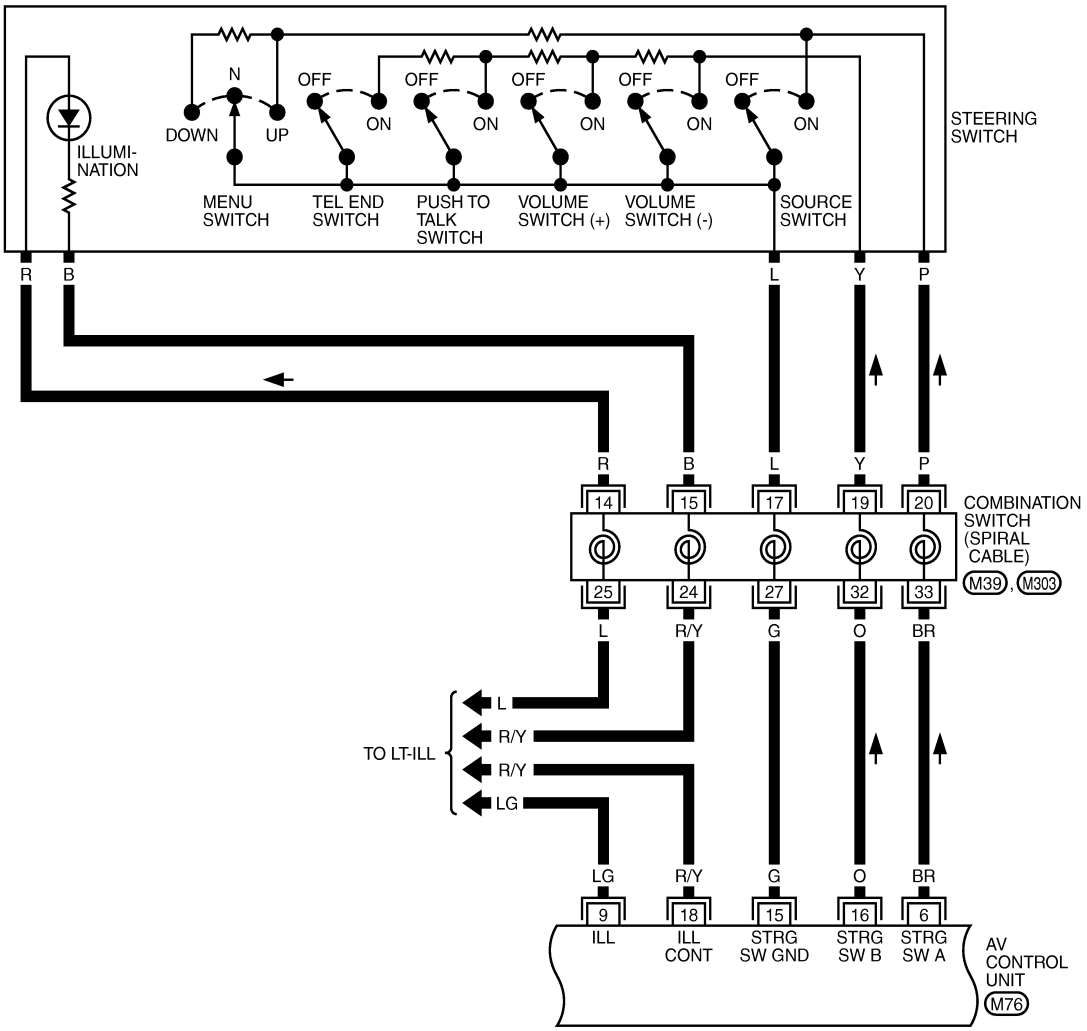


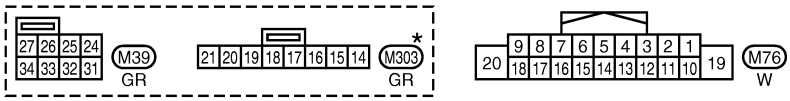


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8263E

AV-AV-02

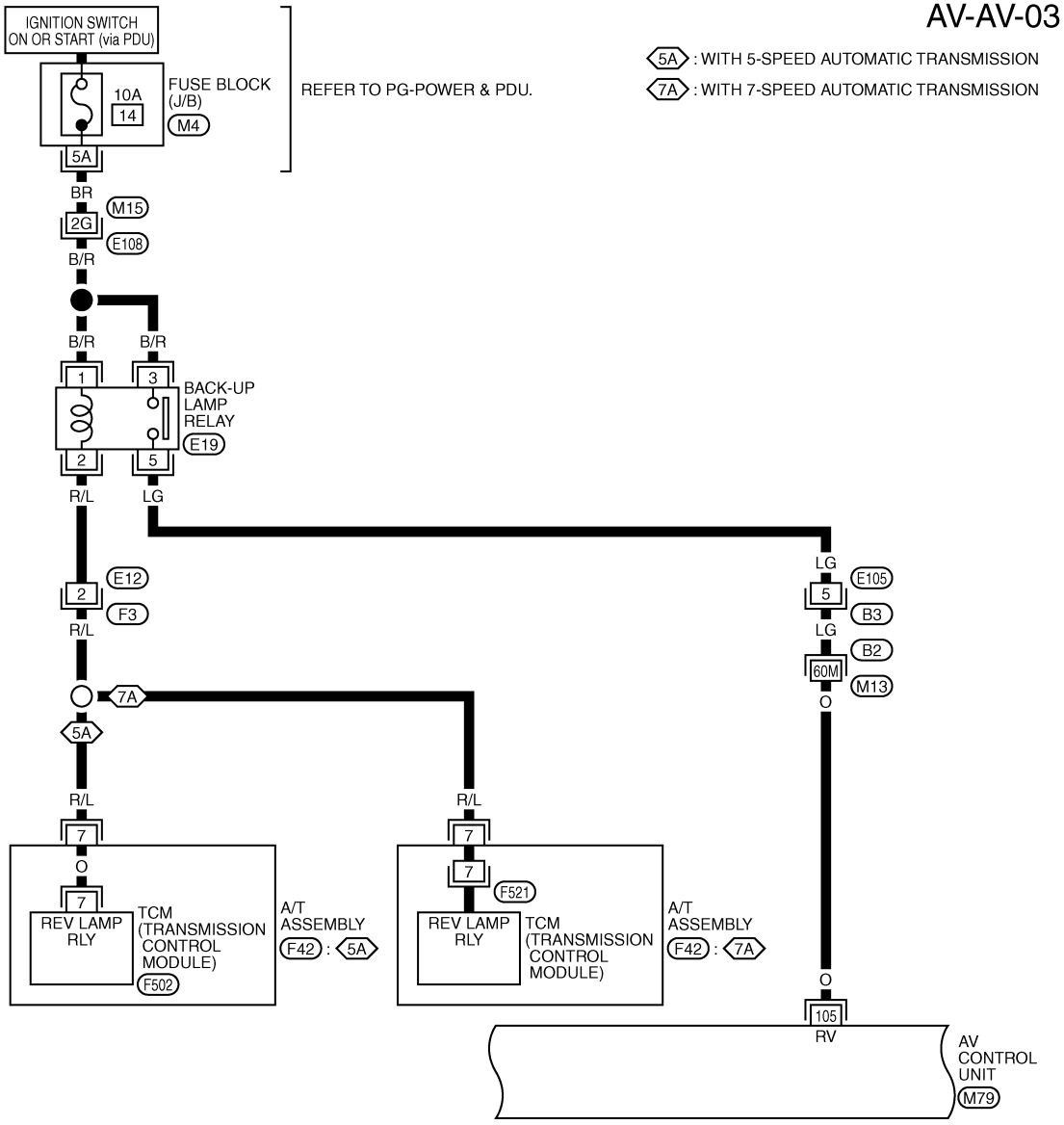


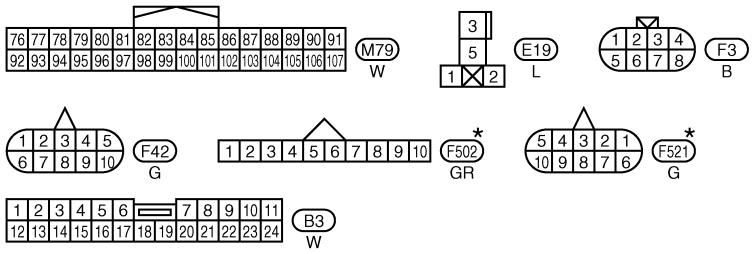


* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6674E

AV-AV-03



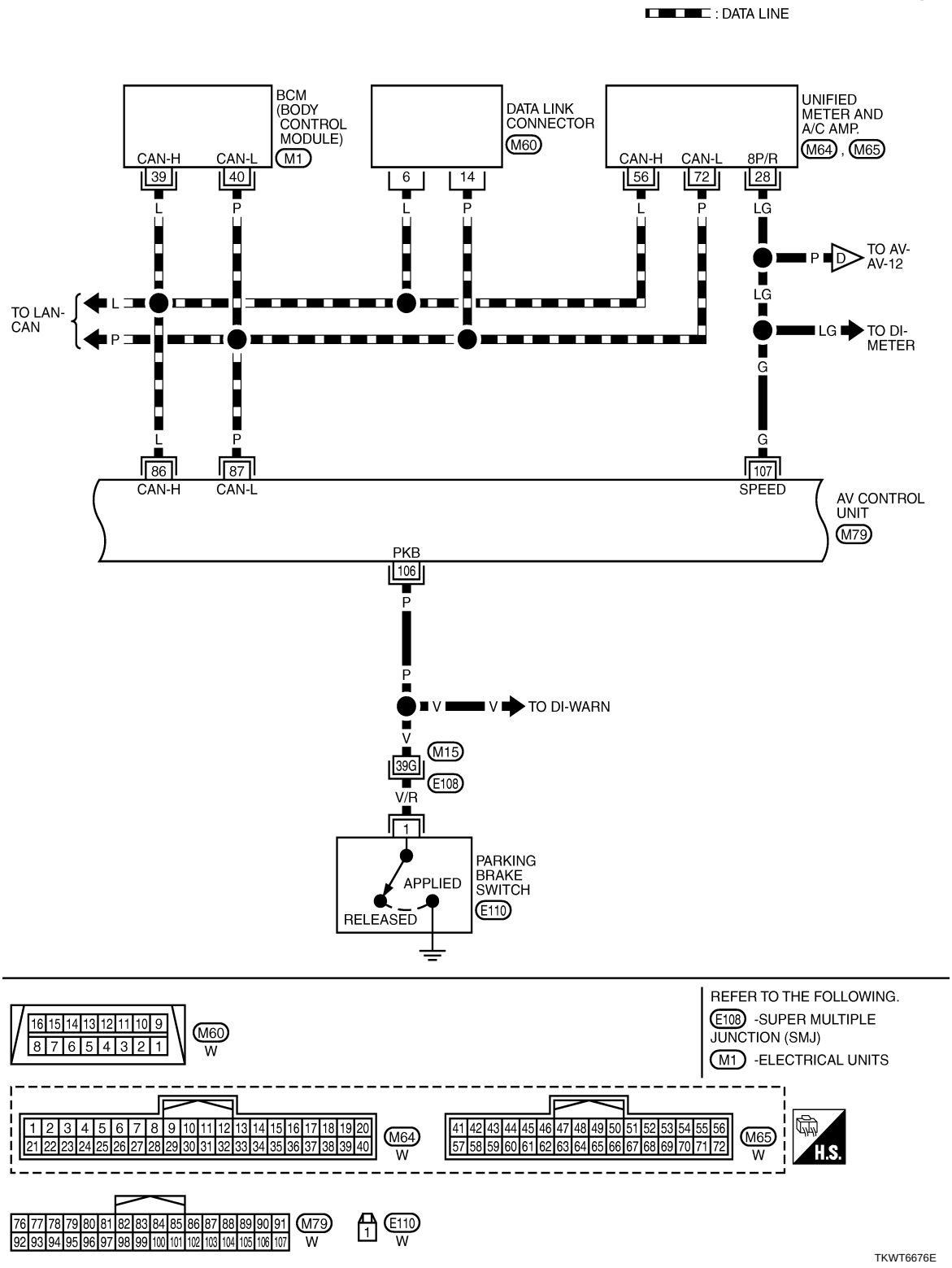


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

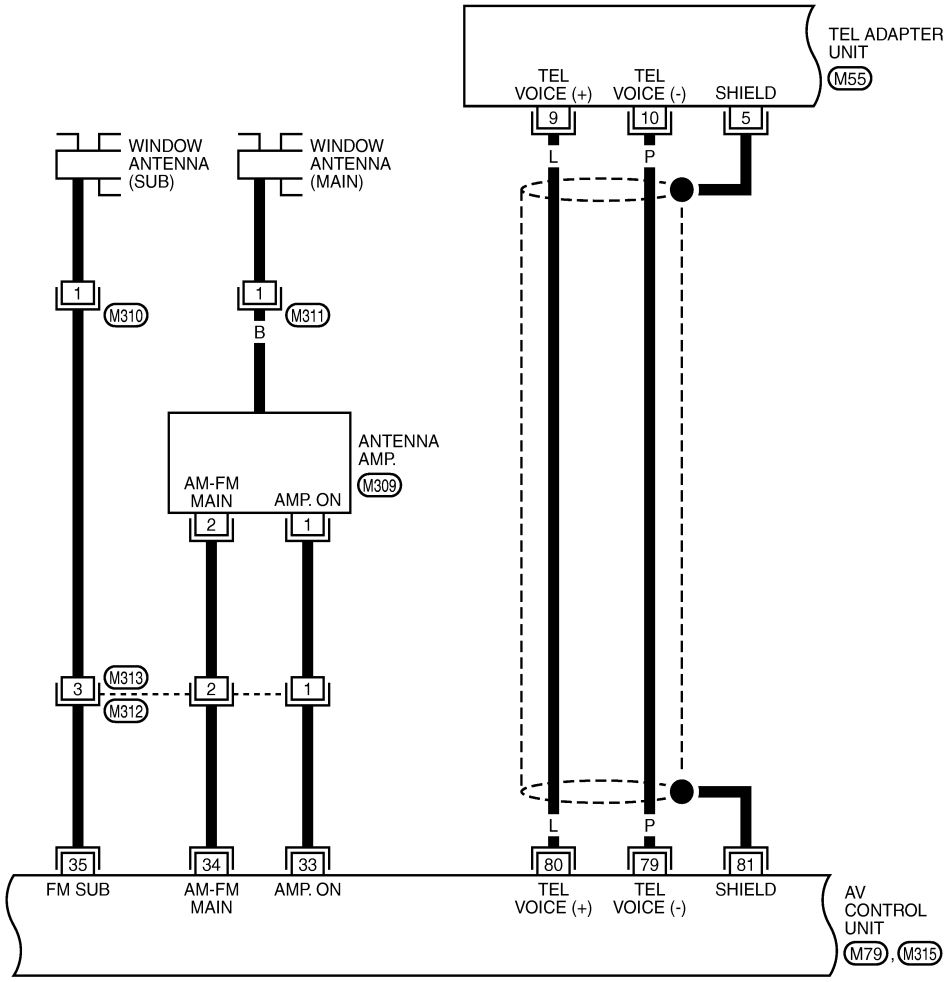
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

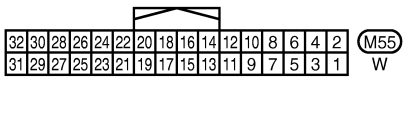
TKWT8264E

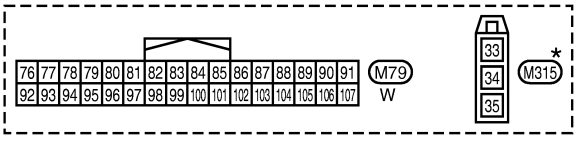
AV-AV-04

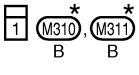

: DATA LINE
BCM (BODY CONTROL MODULE)
M1
CAN-H
CAN-L
39
40
DATA LINK CONNECTOR
M60
6
14
UNIFIED METER AND A/C AMP.
M64, M65
CAN-H
CAN-L
8P/R
56
72
28
TO LAN-CAN
TO AV-AV-12
TO DI-METER
86
87
107
CAN-H
CAN-L
SPEED
AV CONTROL UNIT
M79
PKB
106
TO DI-WARN
M15
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH
E110
REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M1 -ELECTRICAL UNITS
M60
W
M64
W
M65
W
H.S.
M79
W
E110
W
TKWT6676E

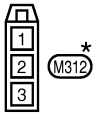
AV-AV-05







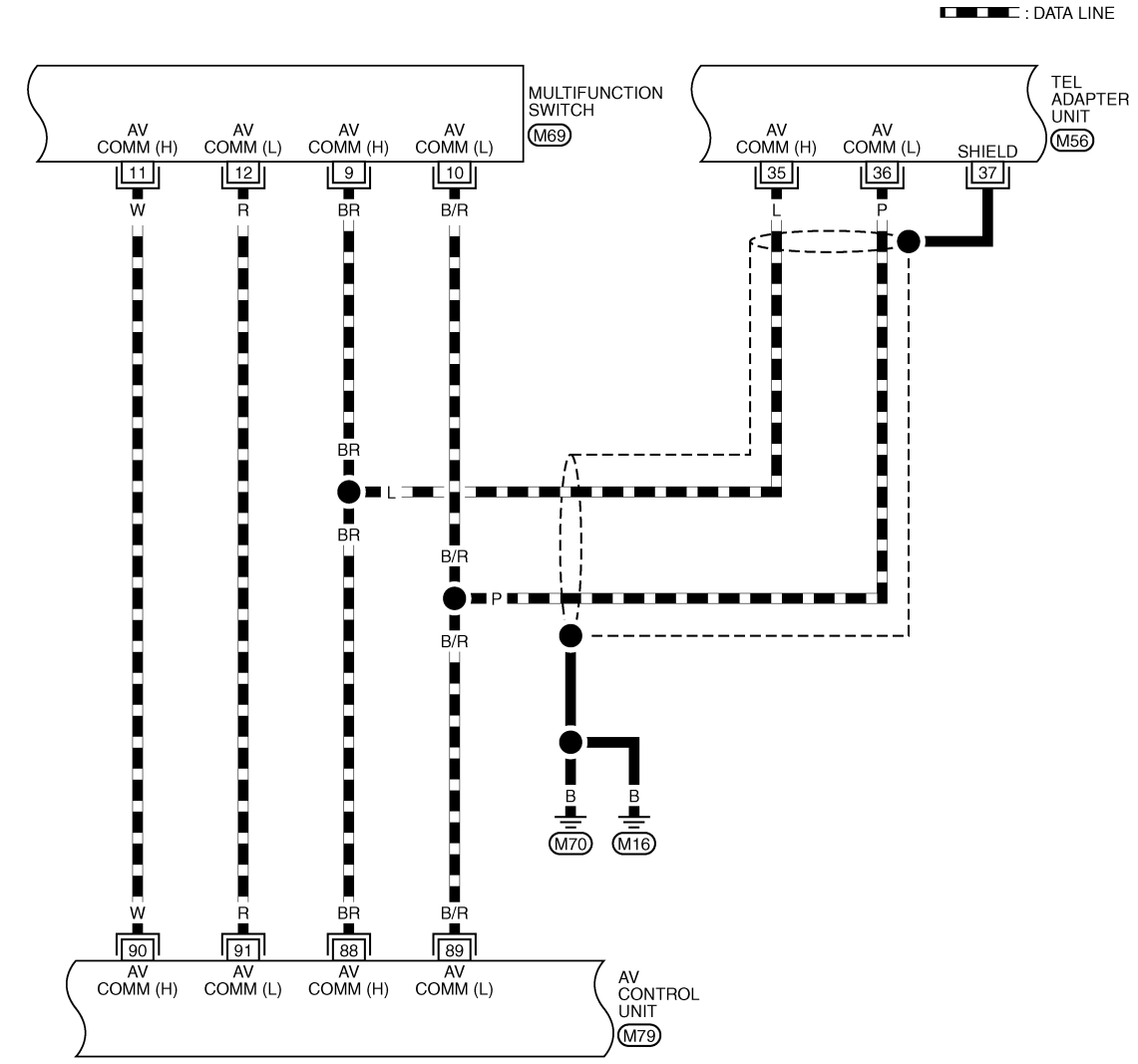


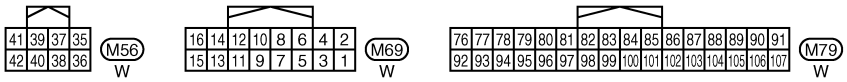


∗ : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6677E

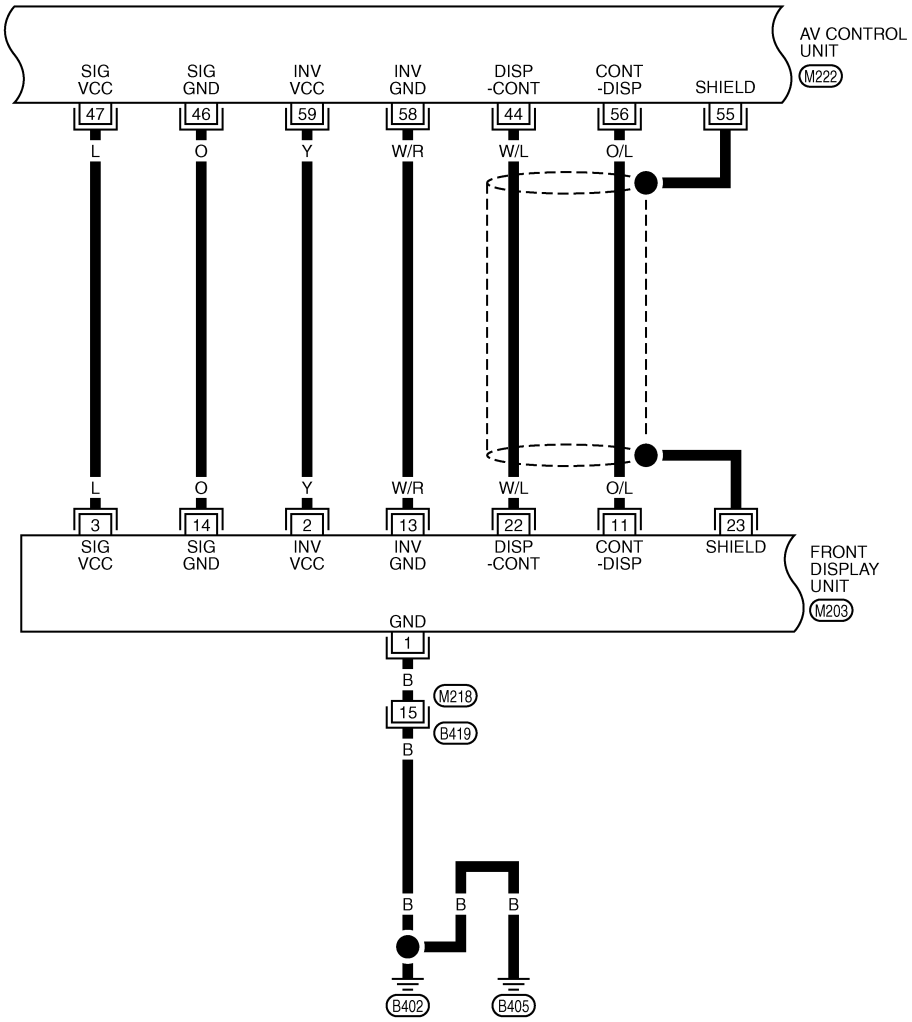
AV-AV-06

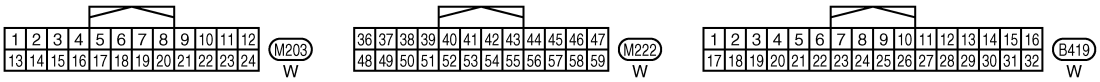




TKWT8265E

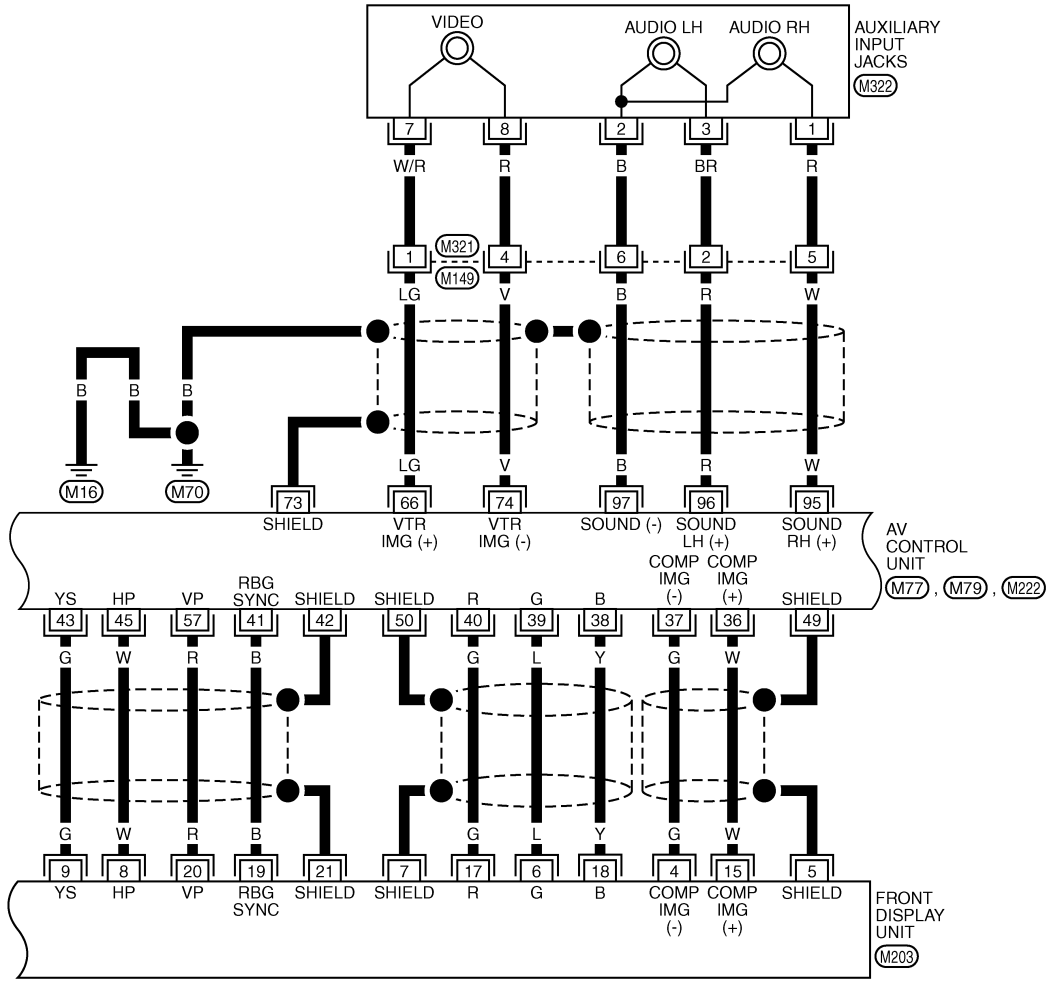
AV-AV-07

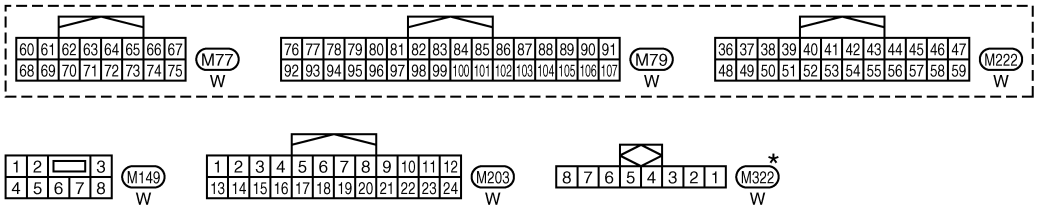




TKWT8266E

AV-AV-08

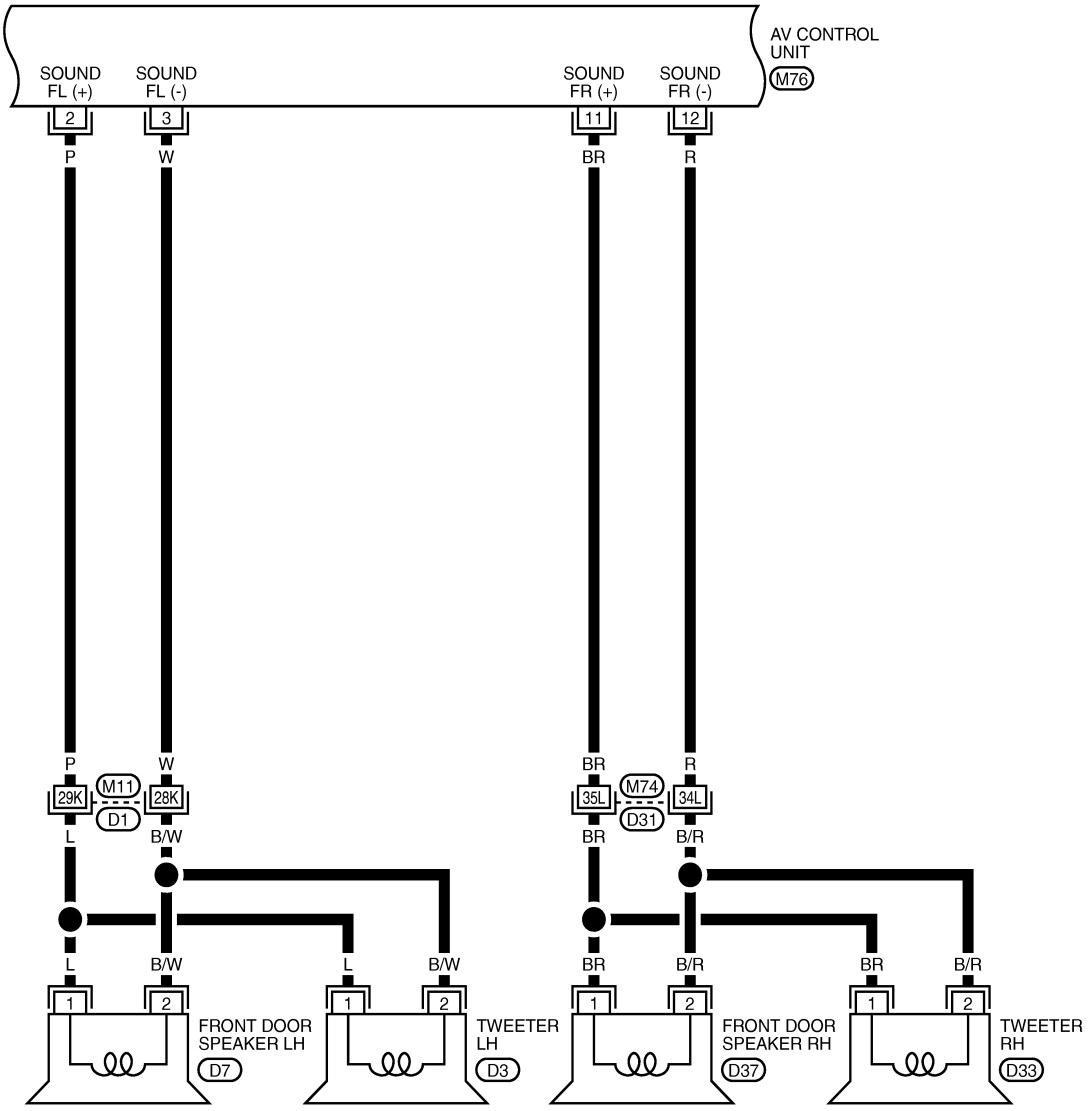


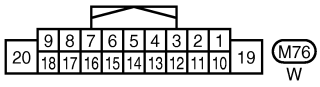


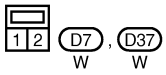
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8267E

AV-AV-09

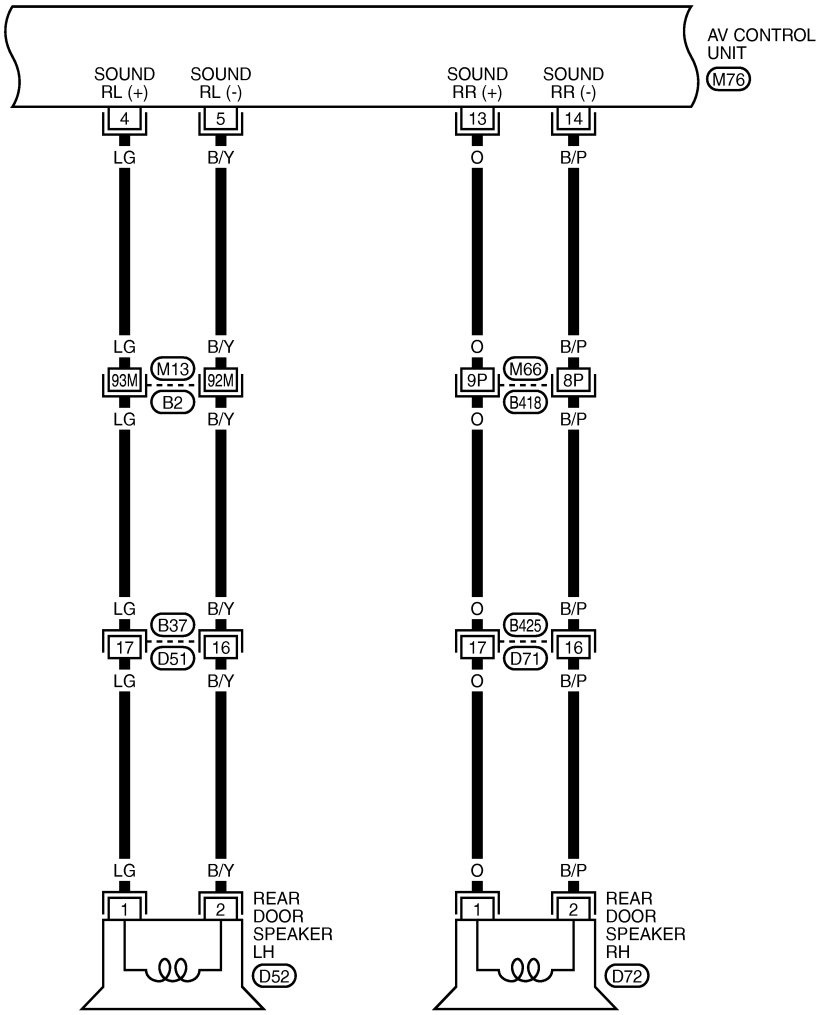


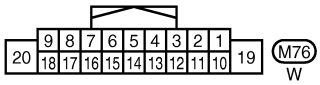


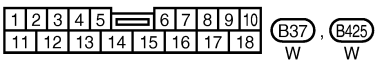


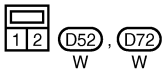
REFER TO THE FOLLOWING.
(D1) , (D31) -SUPER MULTIPLE JUNCTION (SMJ)

TKWT6681E





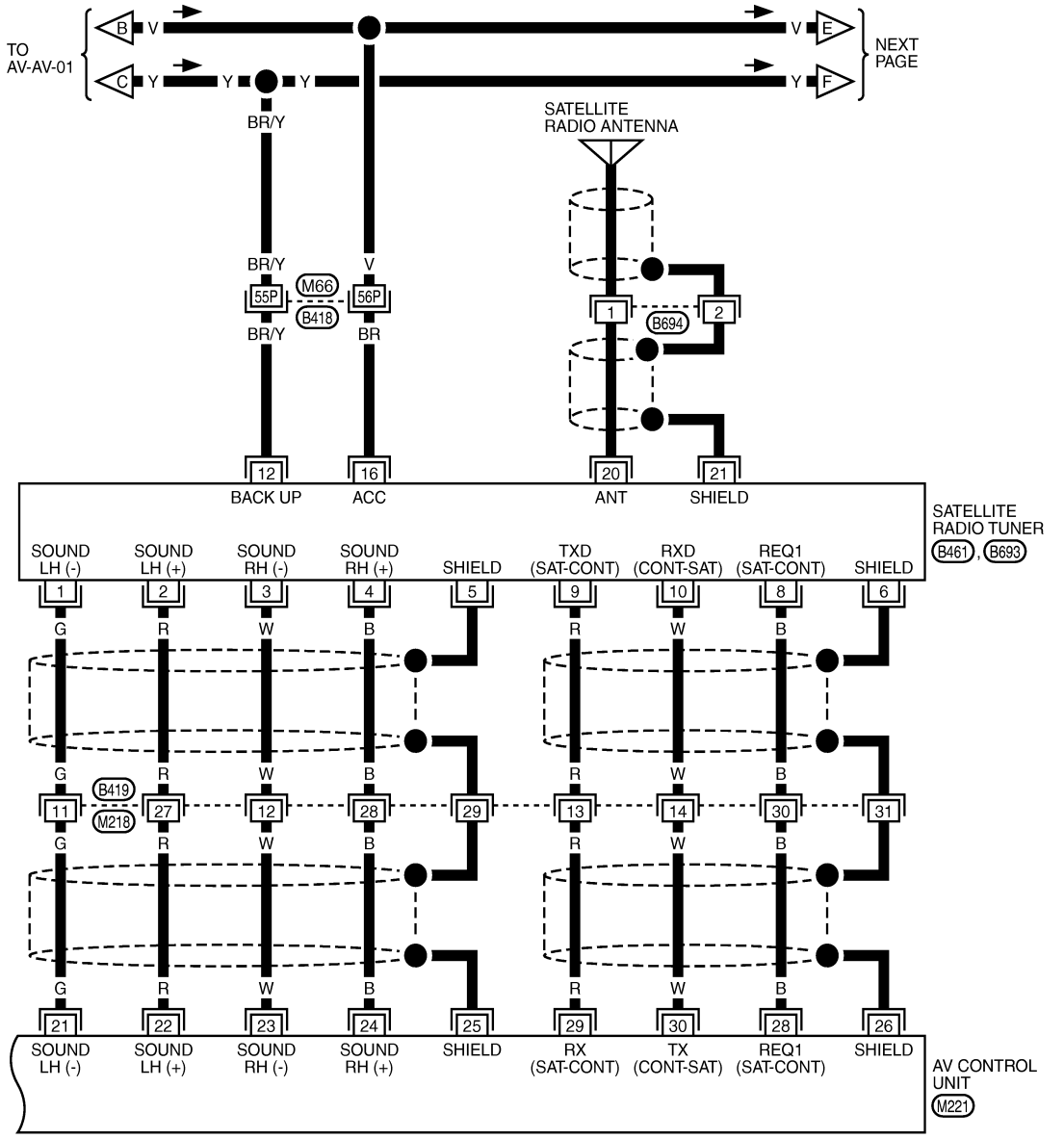




REFER TO THE FOLLOWING.
B2 , B418 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT6682E

AV-AV-11

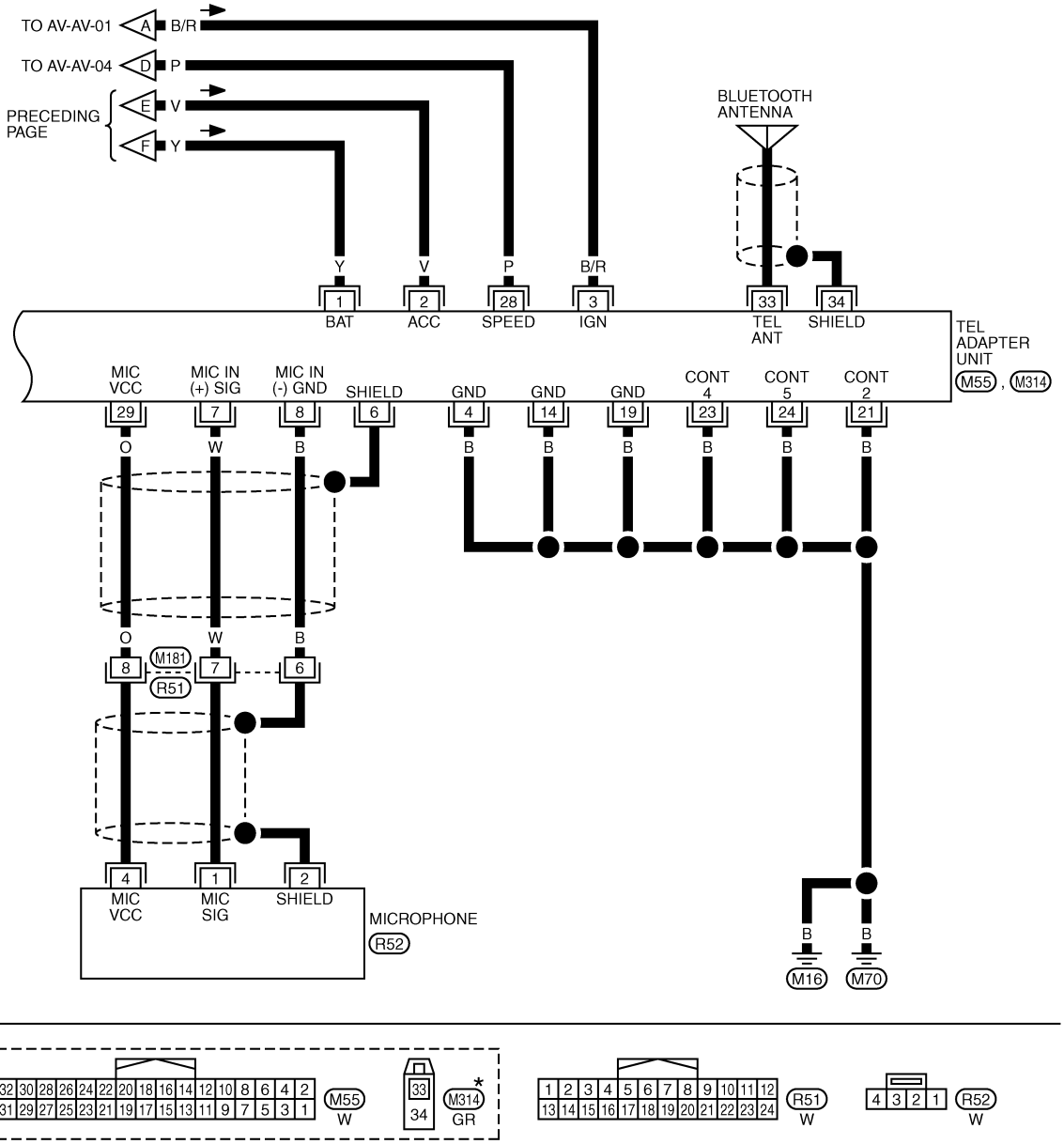


* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6683E

AV-AV-12



*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8268E

WITHOUT NAVIGATION : DTC Index

INFOID:0000000004155796

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	AV-78, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [U1010]	AV-79, "Diagnosis Procedure"

DTC	Display item	Refer to
U1310	CONTROL UNIT (AV) [U1310]	AV-80, "WITHOUT NAVIGATION : DTC Logic"
U1200	Control Unit FLASH-ROM [U1200]	AV-82, "WITHOUT NAVIGATION : DTC Logic"
U1216	CAN CONT [U1216]	AV-85, "WITHOUT NAVIGATION : DTC Logic"
U1243	FRONT DISP CONN [U1243]	AV-101, "WITHOUT NAVIGATION : Diagnosis Procedure"
U1255	SAT CONN [U1255]	AV-107, "Diagnosis Procedure"
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	AV-110, "WITHOUT NAVIGATION : Description"
U1300 U1256	• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	AV-110, "WITHOUT NAVIGATION : Description"
U1300 U1240 U1256	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • HAND FREE CONN [U1256]	AV-110, "WITHOUT NAVIGATION : Description"

WITH NAVIGATION

WITH NAVIGATION : Reference Value

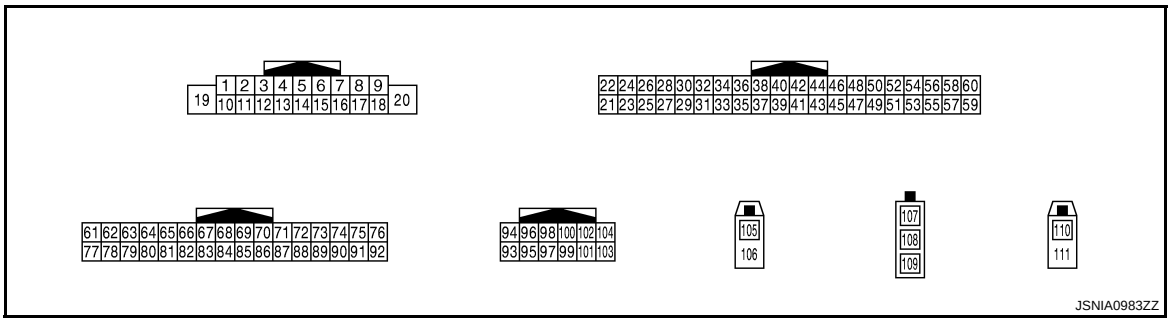
INFOID:0000000004155797

VALUES ON THE DIAGNOSIS TOOL

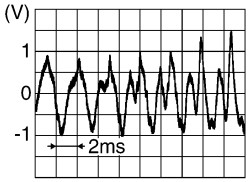
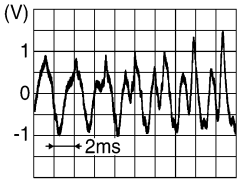
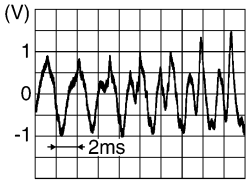
CONSULT-III monitor item

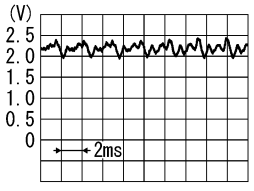
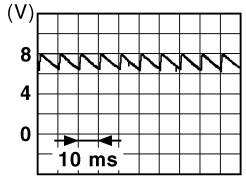
Display Item	Display	Vehicle status	Remarks
VHCL SPD SIG	On	Vehicle speed >0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed =0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	Changes in indication may be delayed. This is normal.
	Off	Parking brake is released.	
ILLUM SIG	On	Light switch ON.	—
	Off	Light switch OFF.	
IGN SIG	On	Ignition switch ON.	—
	Off	Ignition switch in ACC position.	
REV SIG	On	Shift the selector lever to “R” position.	Changes in indication may be delayed. This is normal.
	Off	Shift the selector lever other than “R” position.	

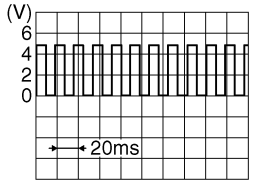
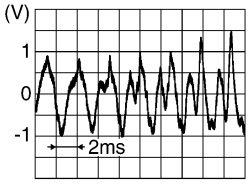
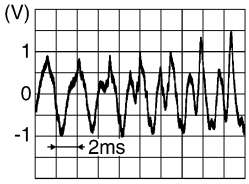
TERMINAL LAYOUT

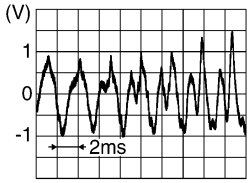
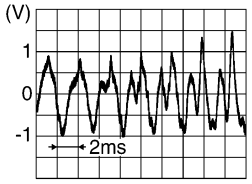
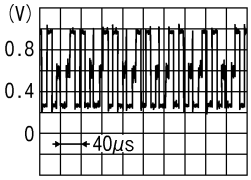
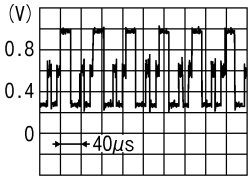
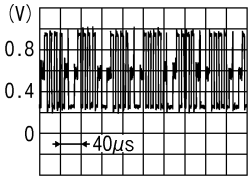
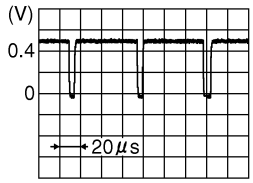


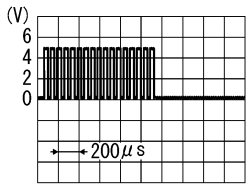
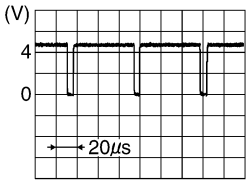
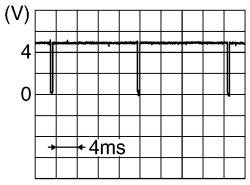
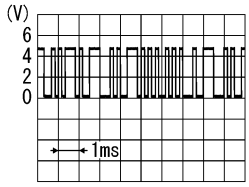
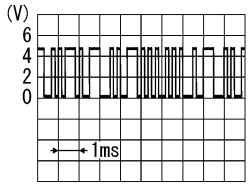
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
2 (R/L)	3 (W)	Sound signal LH	Output	Ignition switch ON	Audio sound output. (except DVD mode)*1	 SKIB3609E
4 (L/G)	5 (L/Y)	Voice guidance signal	Output	Ignition switch ON	Voice guidance output.	 SKIB3609E
6 (BR)	15 (G)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing MENU UP switch.	1 V
					Keep pressing MENU DOWN switch.	2 V
					Keep pressing ENTER switch.	3 V
					Except for above.	5 V
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
8 (R/Y)	Ground	Illumination control signal	Input	Ignition switch ON	Illumination control switch is operated by lighting switch in ON position.	Change between approx. 0 V and approx. 12 V
9 (LG)	Ground	Illumination signal	Input	Ignition switch ON	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12 V
11 (P)	12 (L)	Sound signal RH	Output	Ignition switch ON	Audio sound output. (except DVD mode)*1	 SKIB3609E
14	—	Shield	—	—	—	—
15 (G)	Ground	Steering switch signal ground	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
16 (O)	15 (G)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	1 V
					Keep pressing switch.	2 V
					Keep pressing switch.	3 V
					Except for above.	5 V
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
21 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
22 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
23 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
24 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
25 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
26 (O)	27	Microphone VCC	Output	Ignition switch ON	—	5 V
27	Ground	Shield (Microphone ground)	—	Ignition switch ON	—	0 V
28 (W)	27	Microphone signal	Input	Ignition switch ON	Give a voice.	 PKIB5037J
35 (Y/G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
36 (P)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake ON.	0 V
					Parking brake OFF.	 JSNIA0007GB

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
37 (O)	Ground	Reverse signal	Input	Ignition switch ON	R position.	12 V
					Other than R position.	0 V
38 (G)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25MPH).	**NOTE:** Maximum voltage may be 12 V due to specifications (connected units).  SKIA6649J
40 (W/R)	Ground	Camera-connection recognition signal	Input	Ignition switch ON	Connected to camera control unit connector.	0 V
					Not connected to camera control unit connector.	5 V
48 (W)	—	AV communication signal (H)	Input/ Output	—	—	—
49 (R)	—	AV communication signal (L)	Input/ Output	—	—	—
50 (BR)	—	AV communication signal (H)	Input/ Output	—	—	—
51 (B/R)	—	AV communication signal (L)	Input/ Output	—	—	—
52 (L)	—	CAN–H	Input/ Output	—	—	—
53 (P)	—	CAN–L	Input/ Output	—	—	—
67 (B/R)	83 (BR)	iPod sound signal LH*2	Input	Ignition switch ON	Connect and play iPod®.	 SKIB3609E
		Sound signal LH*1 (AUX and iPod sound)			When AUX or iPod mode is selected.	
68 (B/W)	84 (L)	iPod sound signal RH*2	Input	Ignition switch ON	Connect and play iPod®.	 SKIB3609E
		Sound signal RH*1 (AUX and iPod sound)			When AUX or iPod mode is selected.	
69*2	—	Shield	—	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
75*2 (R)	76*2 (B)	AUX sound signal LH	Input	Ignition switch ON	AUX sound output.	 SKIB3609E
76*2 (B)	Ground	AUX sound ground	—	Ignition switch ON	—	0 V
91*2 (BR)	76*2 (B)	AUX sound signal RH	Input	Ignition switch ON	AUX sound output.	 SKIB3609E
93 (G/O)	Ground	RGB image signal (R: red)	Output	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1029ZZ
94 (G/R)	Ground	RGB image signal (G: green)	Output	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1030ZZ
95 (G/Y)	Ground	RGB image signal (B: blue)	Output	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1031ZZ
96 (P)	Ground	RGB image signal ground	—	Ignition switch ON	—	0 V
97 (L)	Ground	RGB synchronizing signal	Output	Ignition switch ON	—	 JPNIA0461GB

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
98 (B)	Ground	RGB synchronizing signal ground	—	Ignition switch ON	—	0 V
99 (G)	Ground	RGB area (YS) signal	Output	Ignition switch ON	When RGB image is displayed.	5 V
					When rear view camera image is displayed.	 PKIB4948J
100 (W)	Ground	Horizontal synchronizing (HP) signal	Input	Ignition switch ON	—	 SKIB3601E
101 (R)	Ground	Vertical synchronizing (VP) signal	Input	Ignition switch ON	—	 SKIB3598E
102 (O/L)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting front display brightness.	 PKIB5039J
103 (W/L)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting front display brightness.	 PKIB5039J
105	Ground	GPS antenna signal	Input	Ignition switch ON	Not connected to GPS antenna connector.	5 V
106	—	Shield	—	—	—	—
107	Ground	Antenna amp. ON signal	Output	Ignition switch ON	—	12 V
108	—	AM–FM main	Input	—	—	—
109	—	FM sub	Input	—	—	—

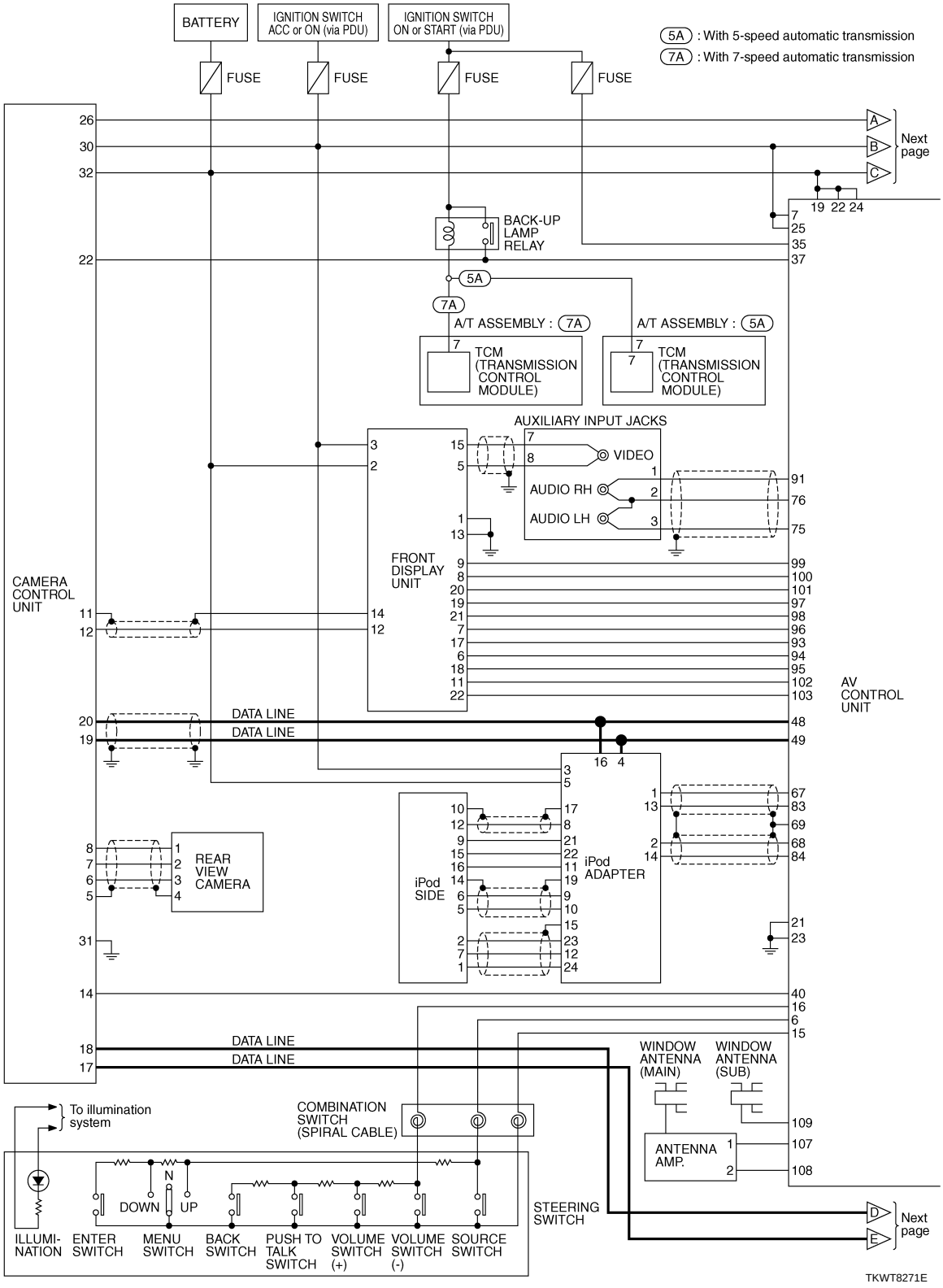
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
110	Ground	Satellite antenna signal	Input	Ignition switch ON	Not connected to satellite antenna connector.	5 V
111	—	Shield	—	—	—	—

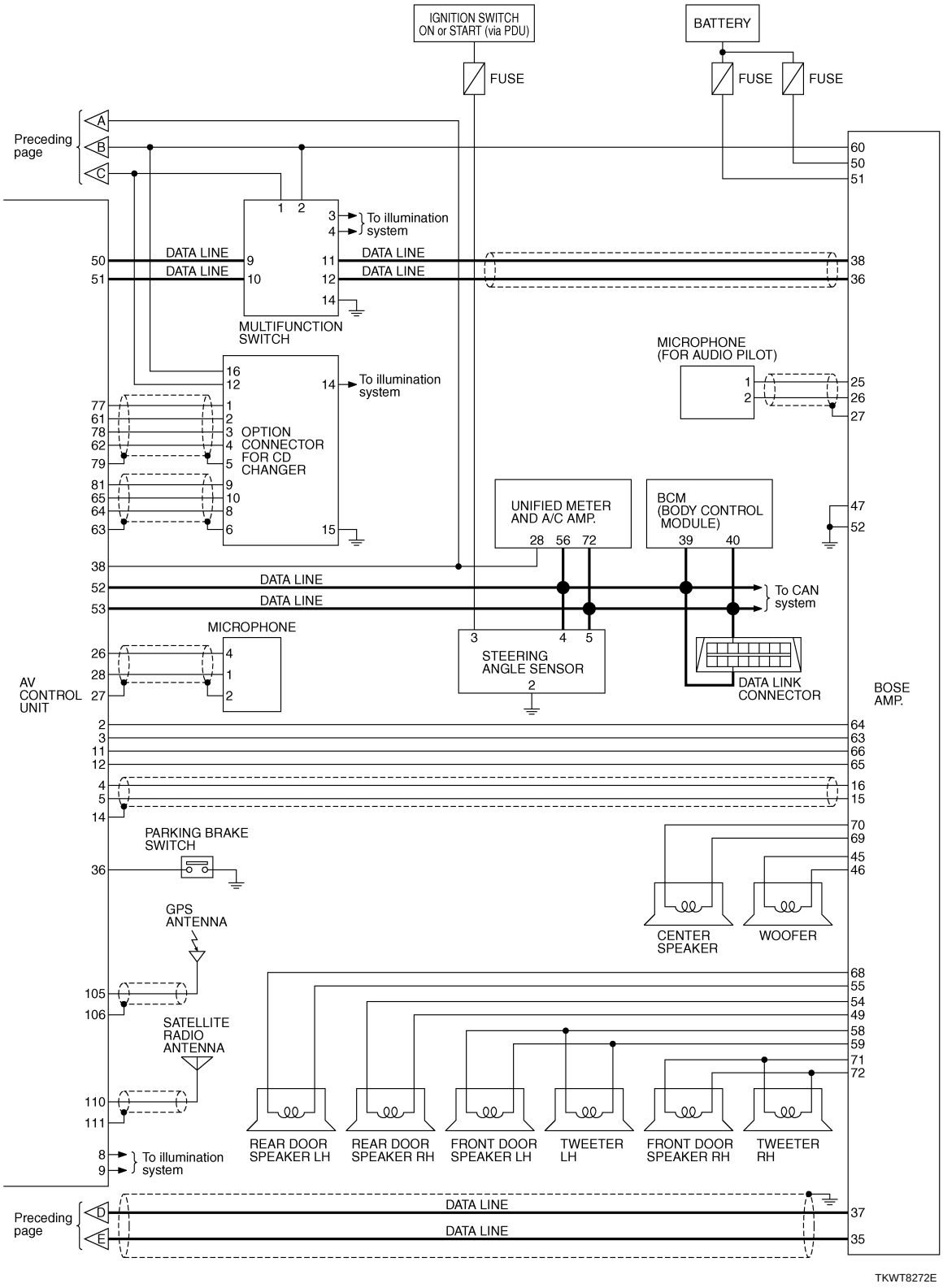
*1: BOSE surround audio 5.1ch system.

*2: BOSE 2ch system models.

WITH NAVIGATION : Schematic - BOSE Audio 2ch System -

INFOID:0000000004155798





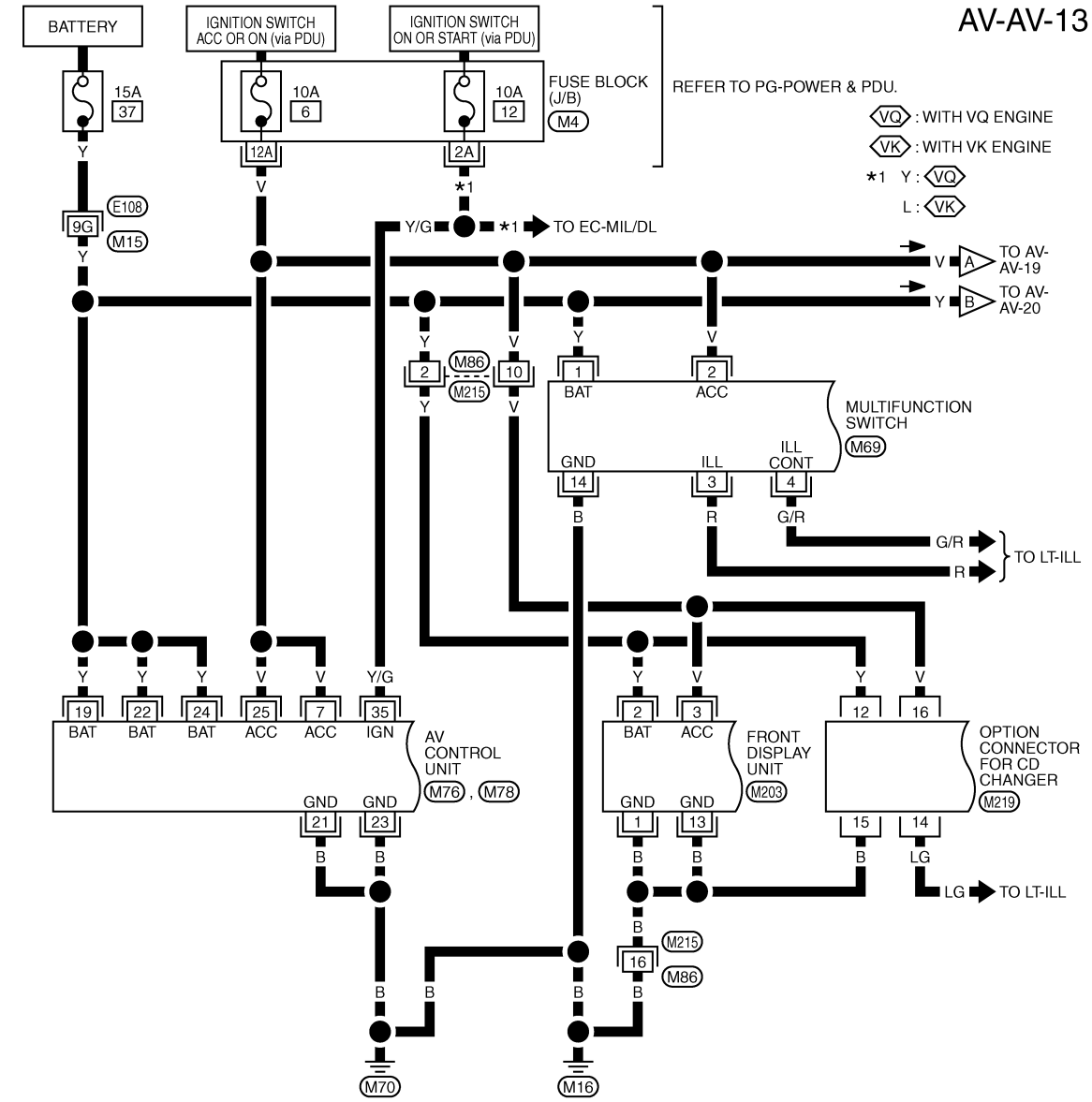
TKWT8272E

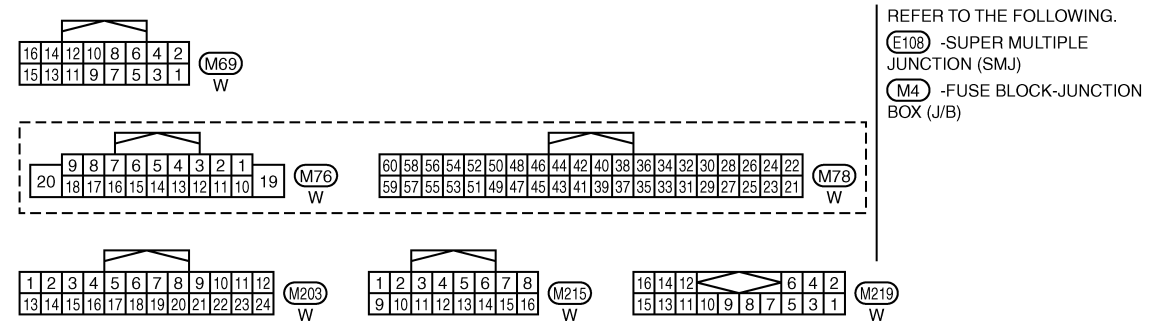
WITH NAVIGATION : Wiring Diagram - AV - / BOSE Audio 2ch System

INFOID:0000000004155799

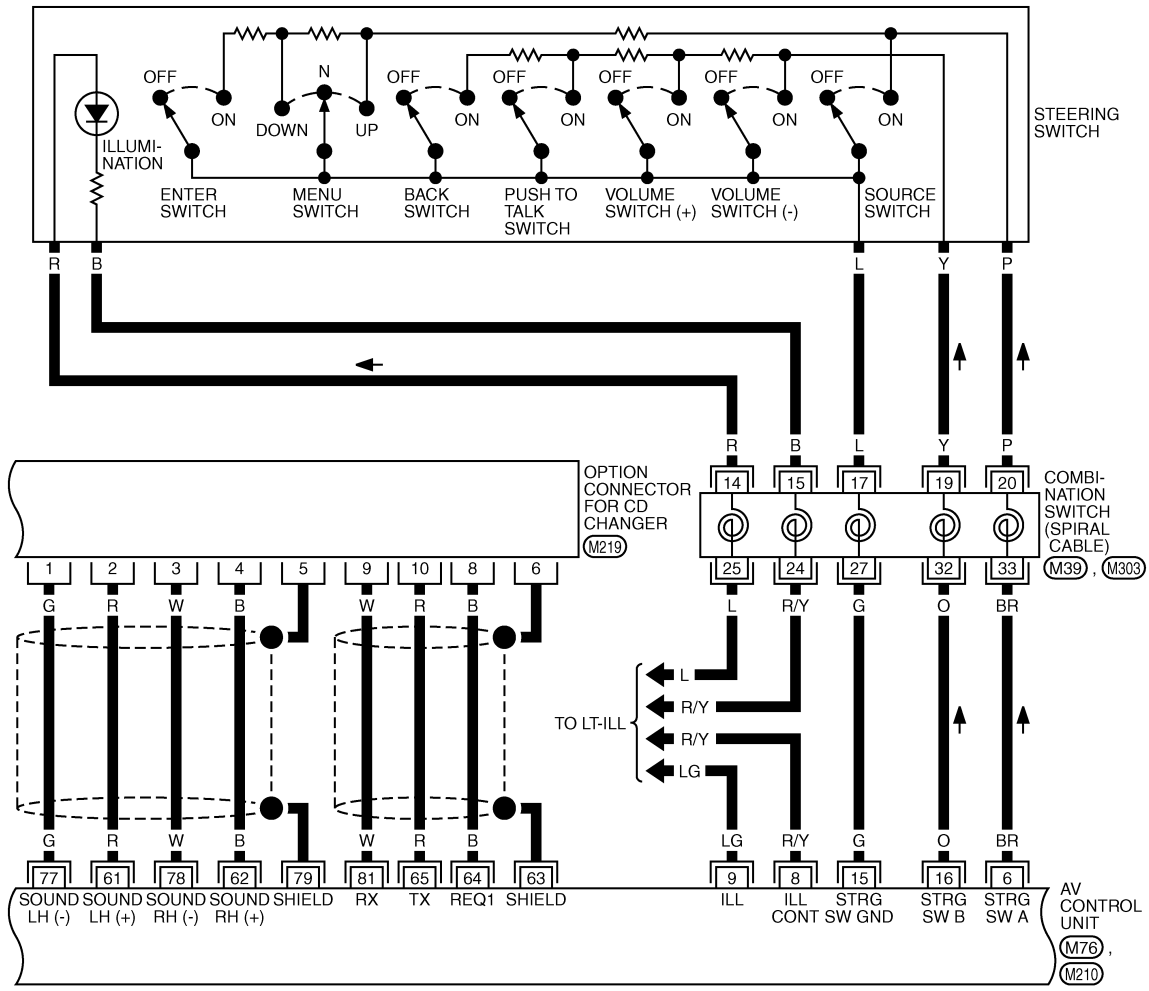
NOTE:

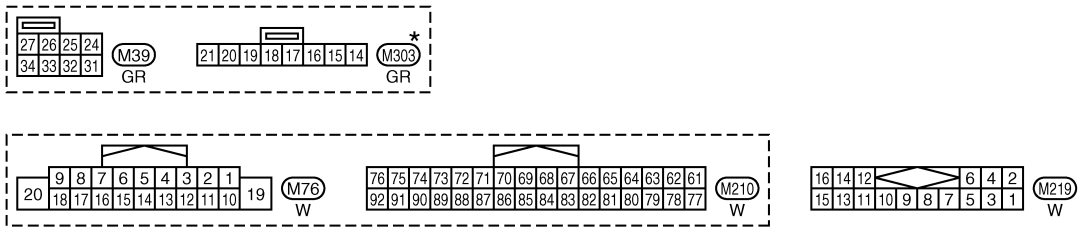
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.





TKWT8273E

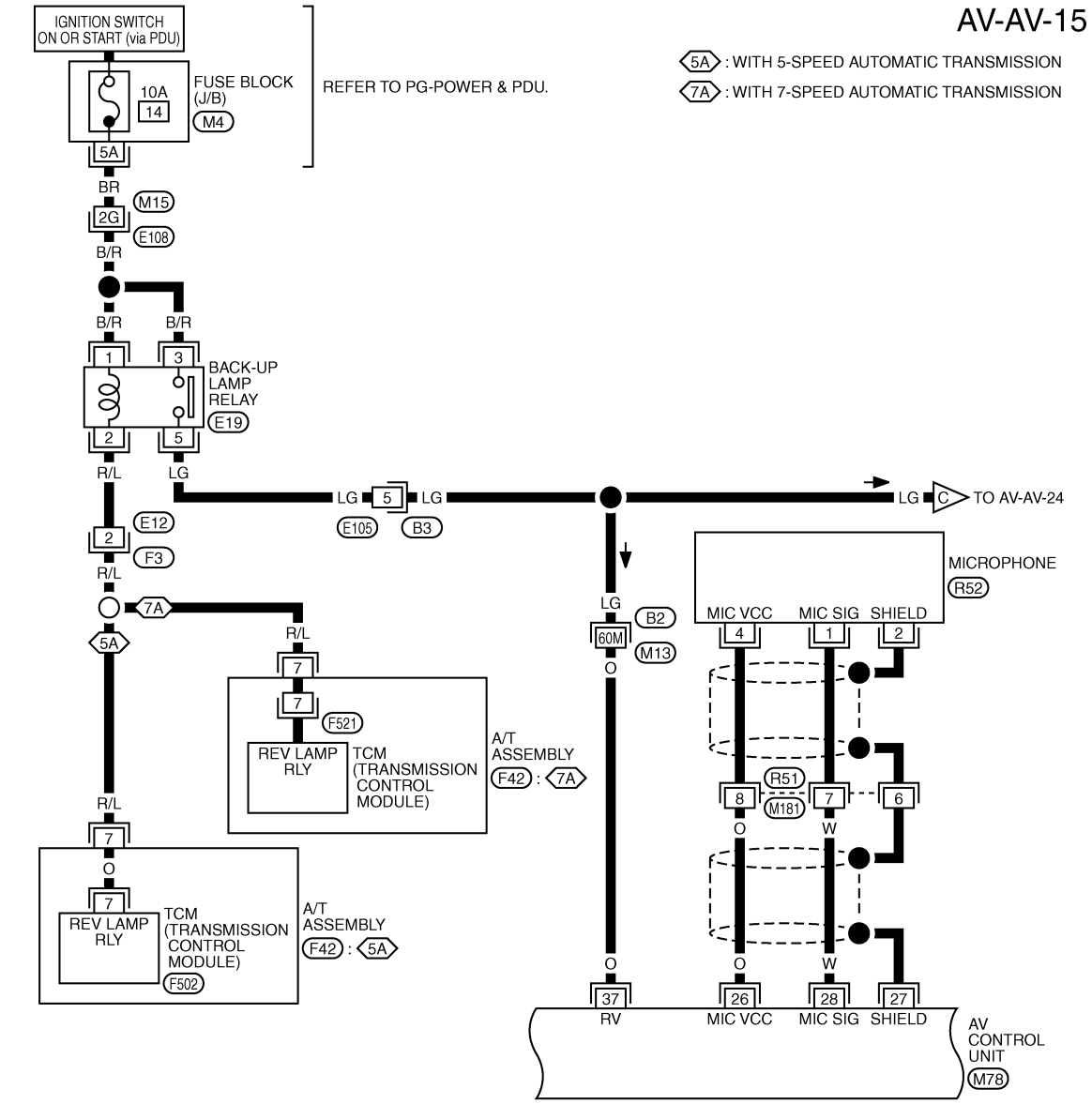


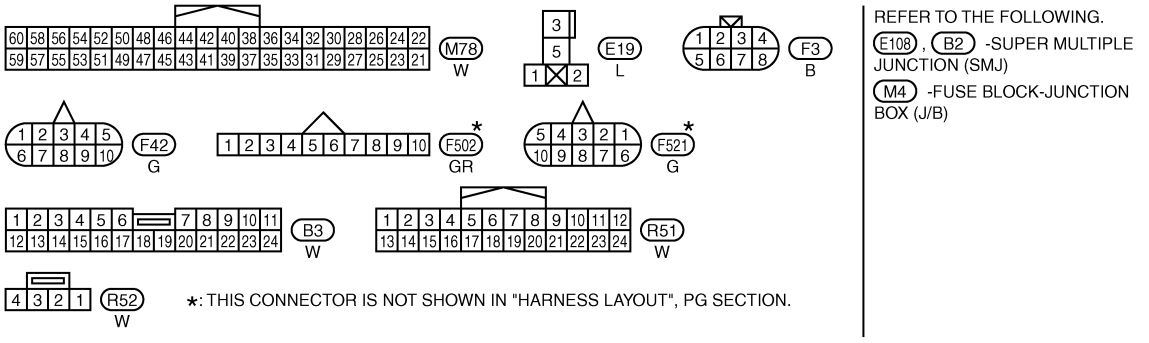


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8274E

AV-AV-15

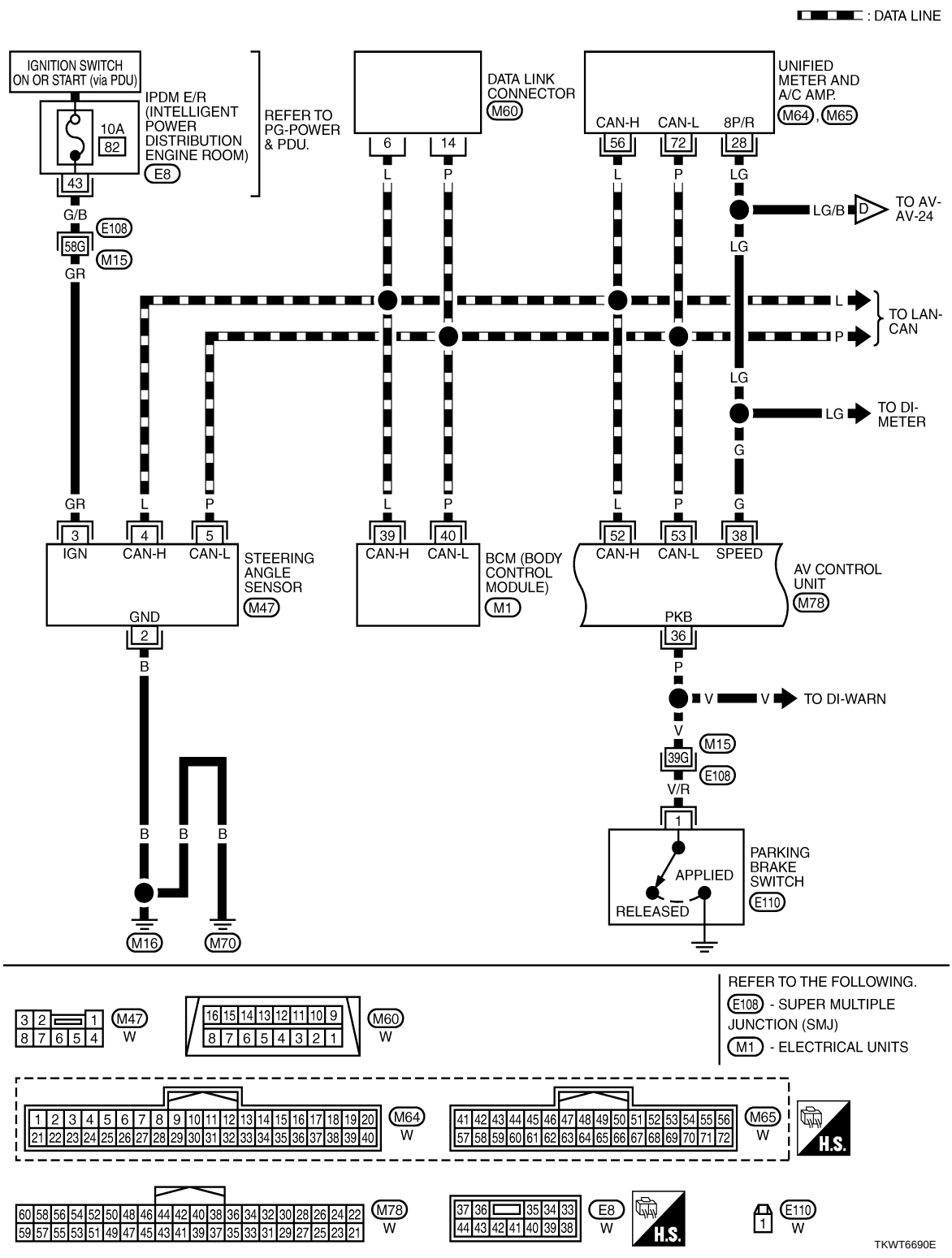




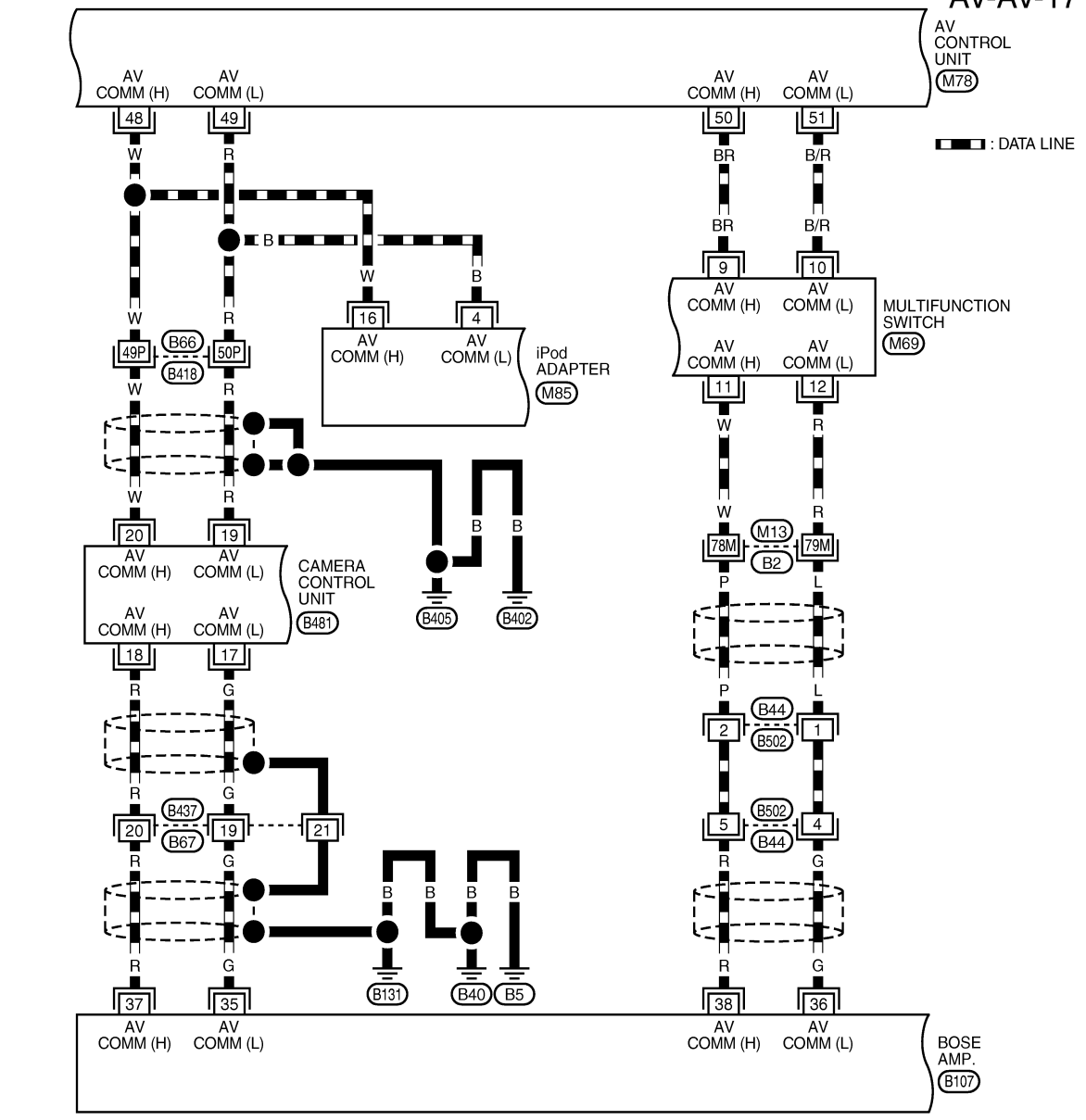
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

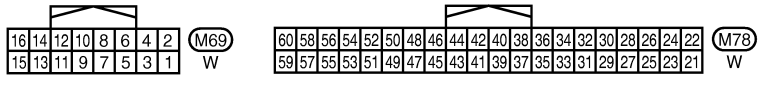
TKWT8275E

AV-AV-16

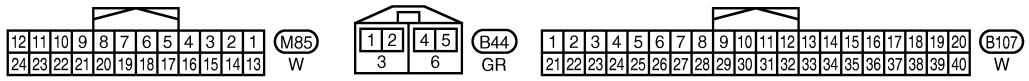

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
G/B
E108
58G
M15
GR
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56
72
28
L
P
LG
LG/B
D
TO AV-AV-24
LG
L
P
TO LAN-CAN
LG
LG
TO DI-METER
G
GR
L
P
3
4
5
IGN
CAN-H
CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE) M1
52
53
38
CAN-H
CAN-L
SPEED
AV CONTROL UNIT M78
PKB
36
P
V
V
TO DI-WARN
V
39G
M15
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B
B
B
M16
M70
M47
W
M60
W
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M64
W
M65
W
H.S.
M78
W
E8
W
H.S.
E110
W
TKWT6690E

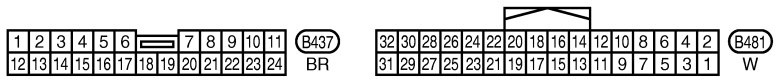
AV-AV-17





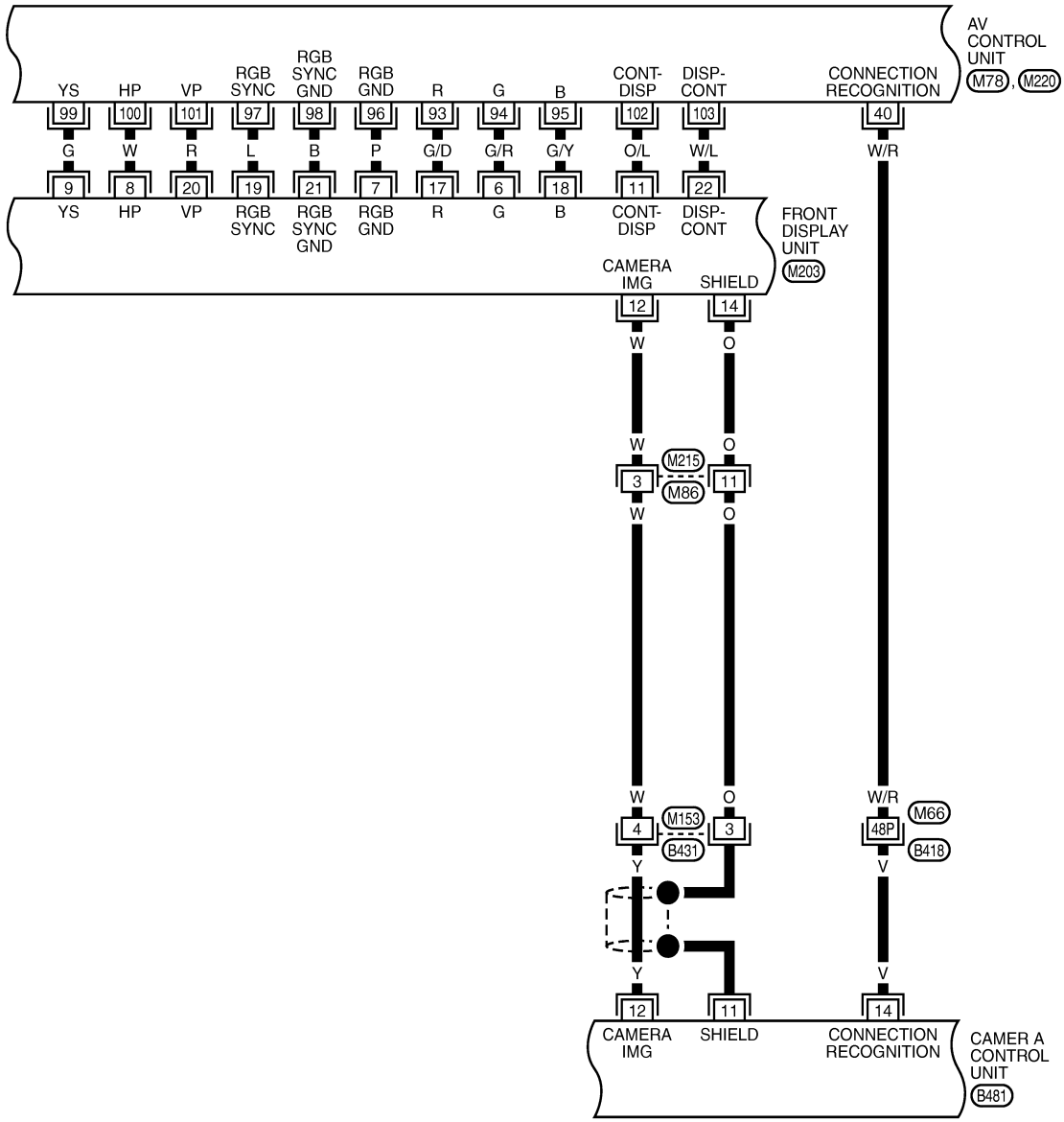
REFER TO THE FOLLOWING.
B2 , B418 - SUPER MULTIPLE JUNCTION (SMJ)

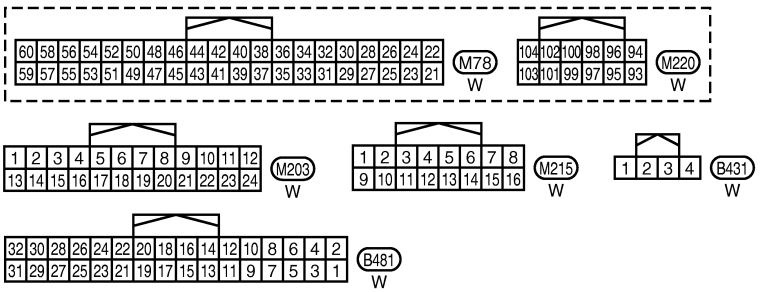




TKWT6691E

AV-AV-18

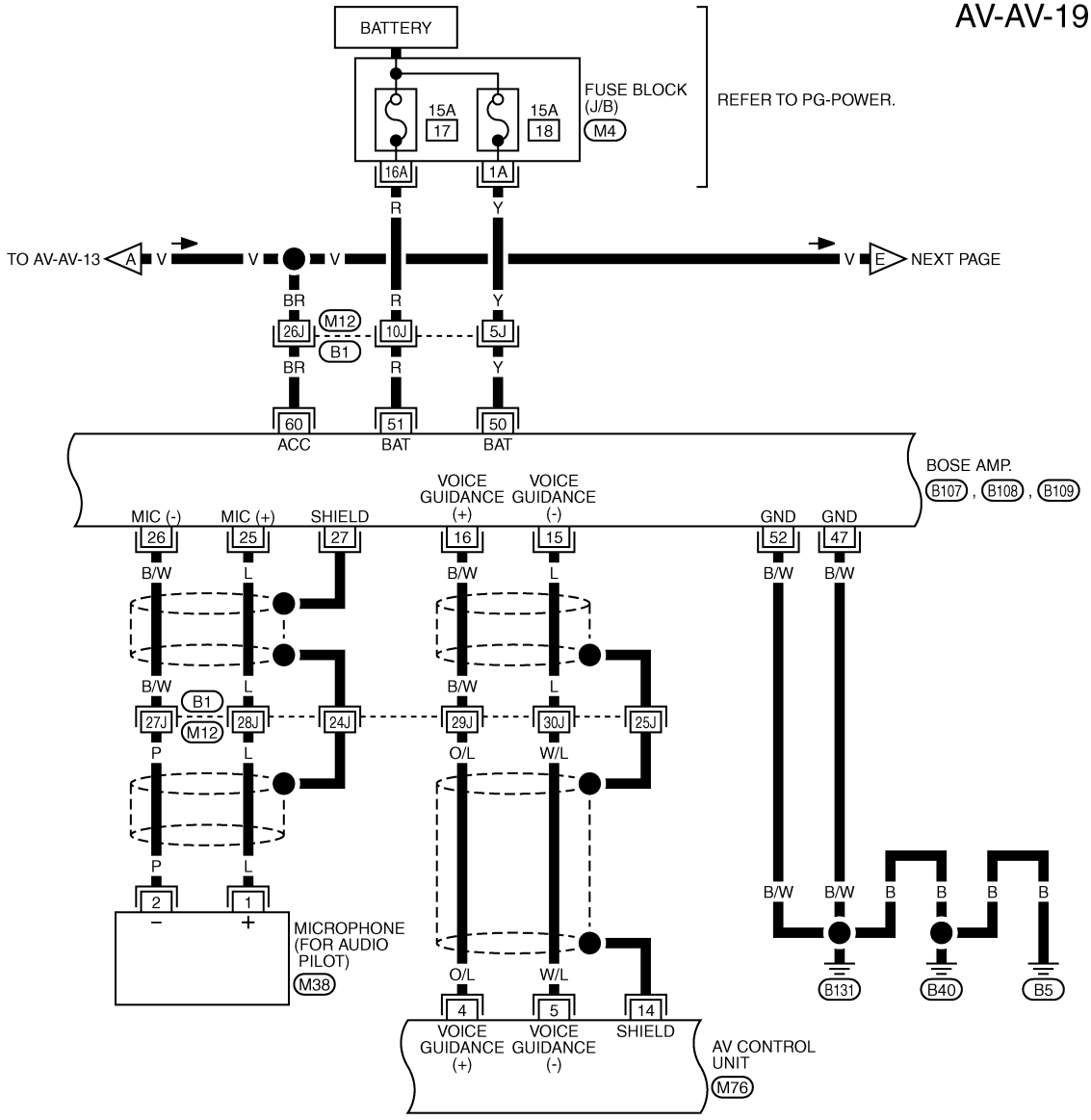


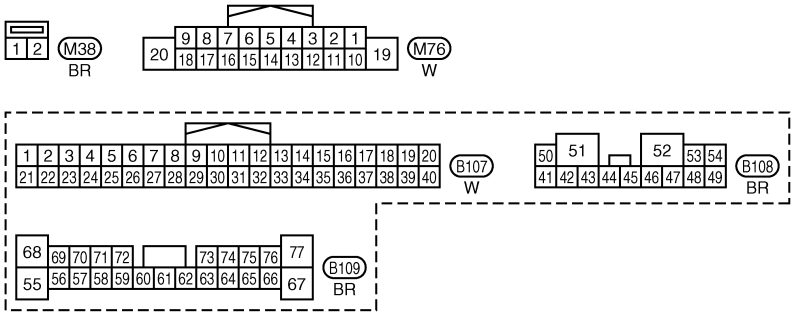


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6692E

AV-AV-19

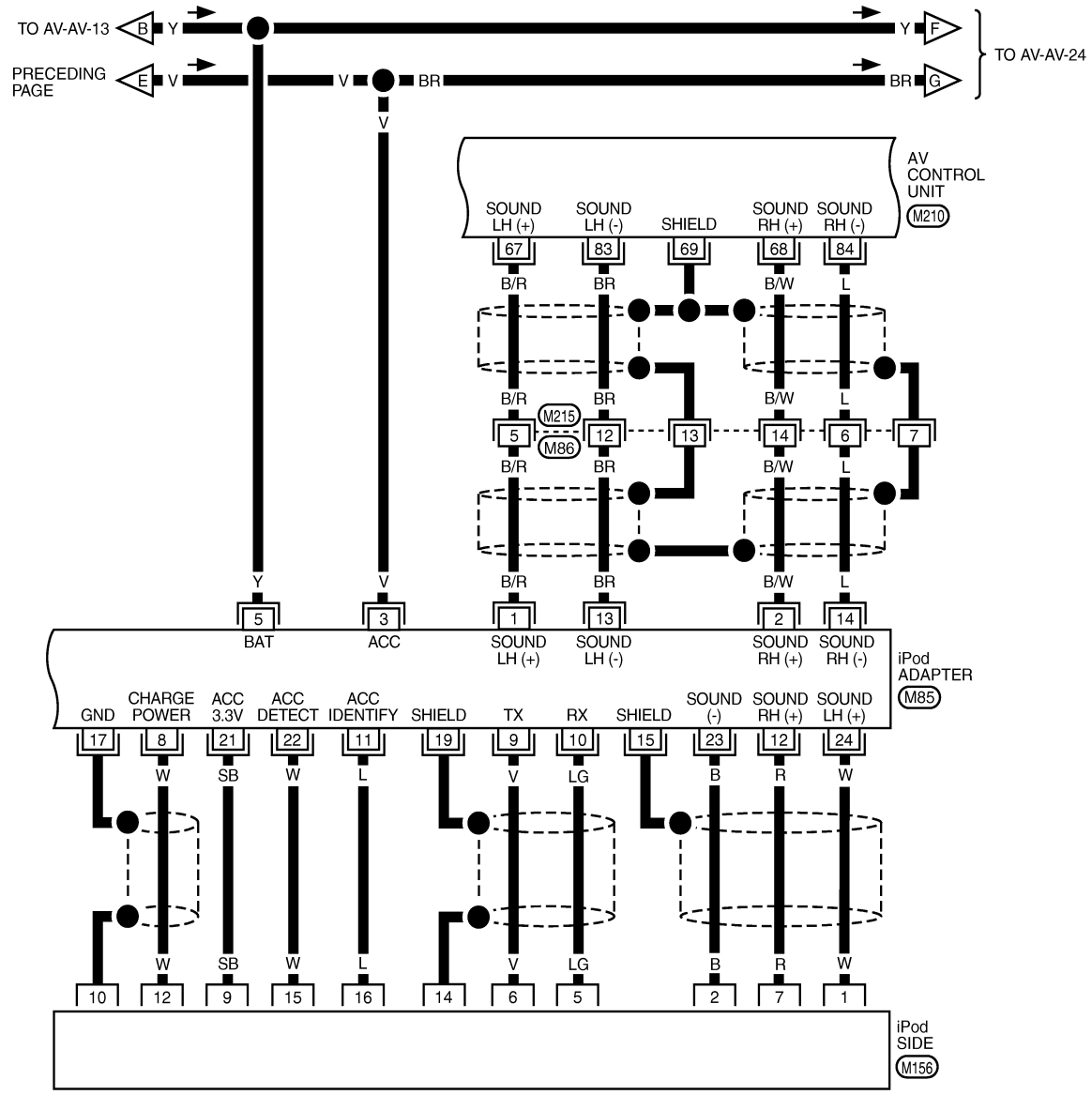


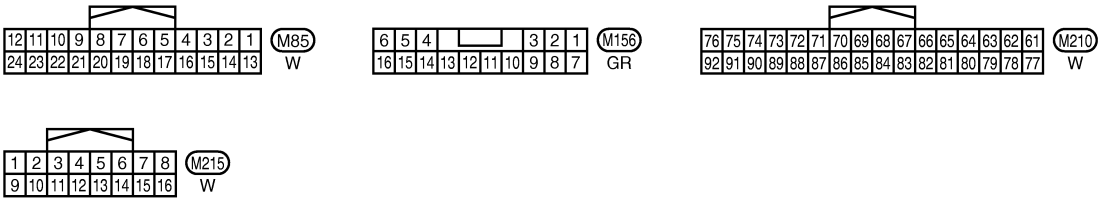


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8276E

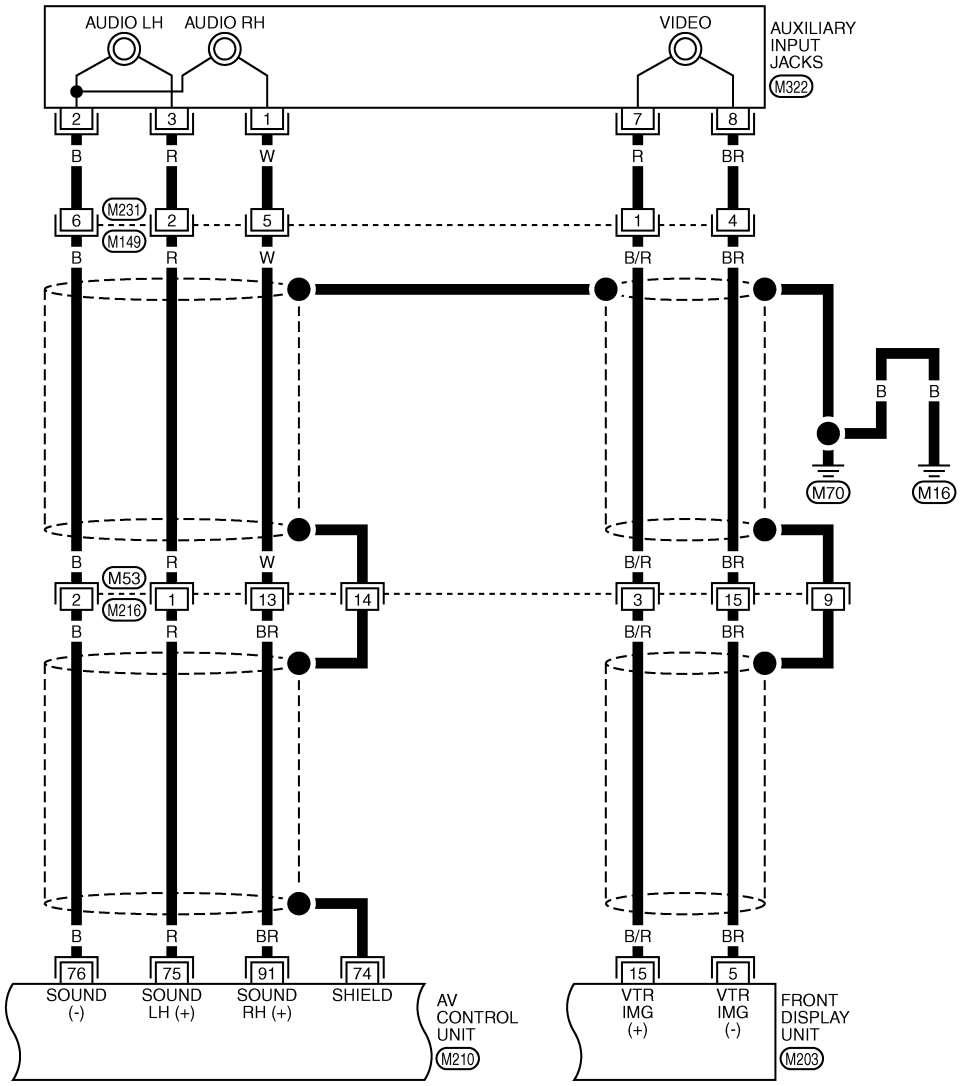
AV-AV-20

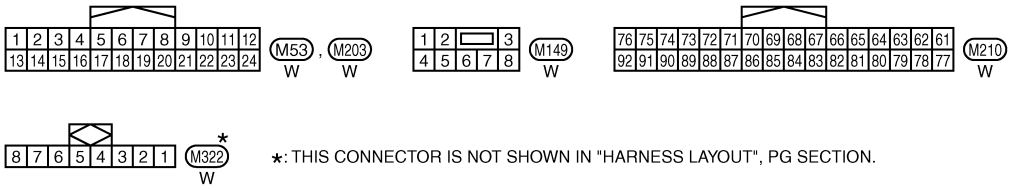




TKWT6695E

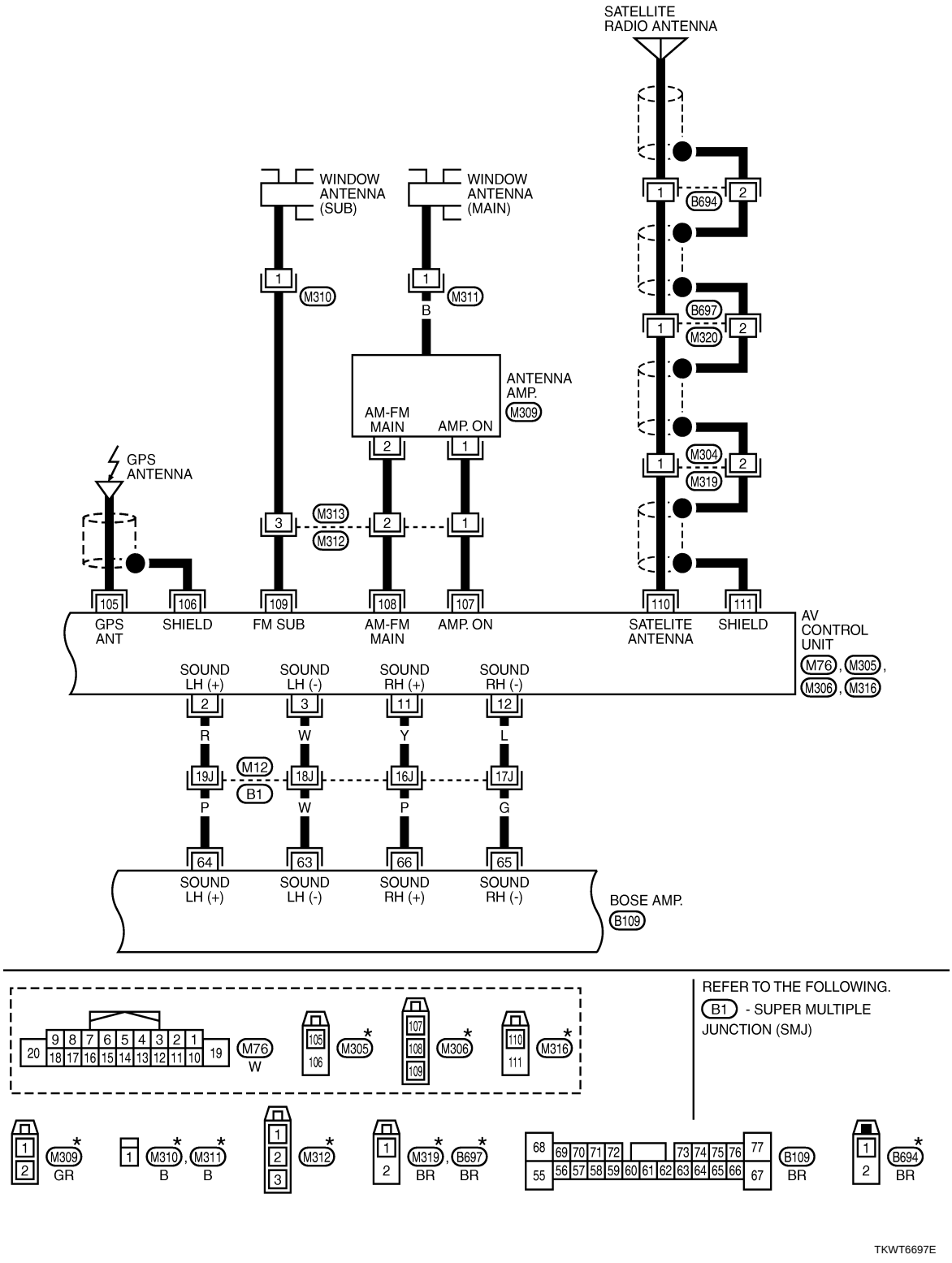
AV-AV-21





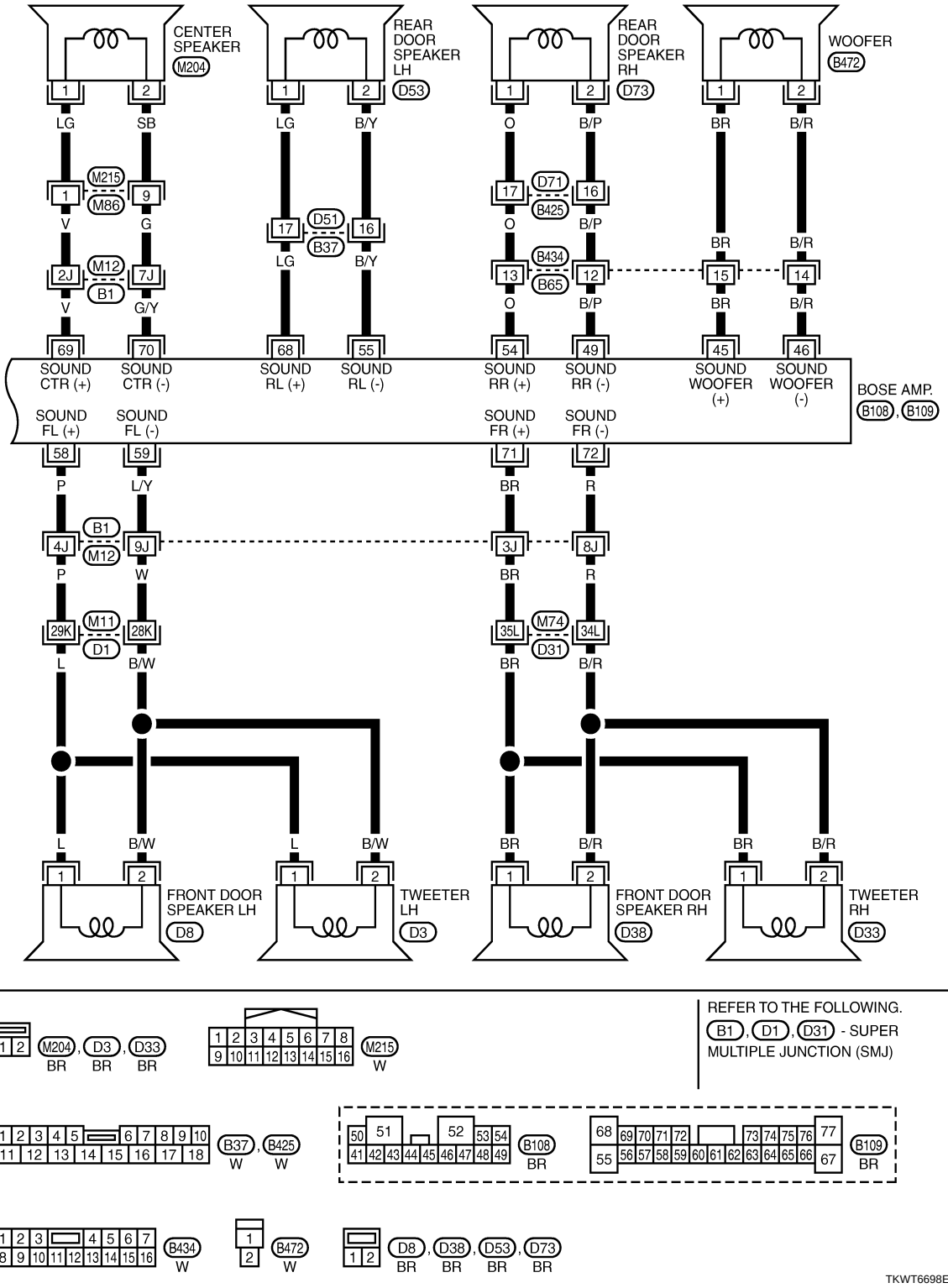
TKWT8277E

AV-AV-22

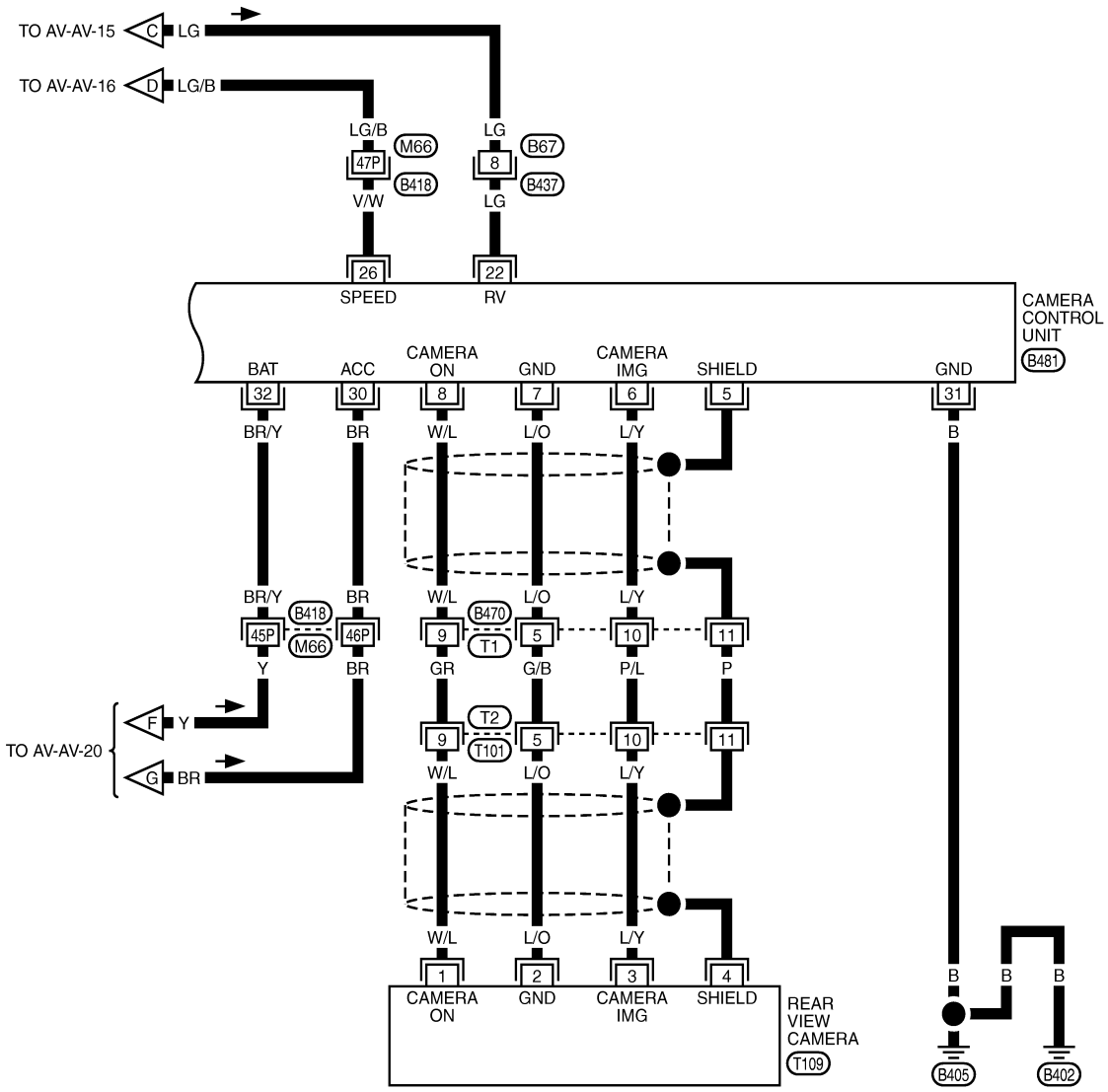


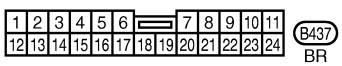
TKWT6697E

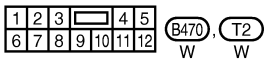
AV-AV-23

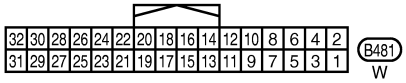

CENTER SPEAKER M204
REAR DOOR SPEAKER LH D53
REAR DOOR SPEAKER RH D73
WOOFER B472
LG SB LG B/Y O B/P BR B/R
M215 M86 D51 B37 D71 B425 B434 B65 M12 B1
V G LG B/Y O B/P BR B/R
V G/Y O B/P BR B/R
69 70 68 55 54 49 45 46
SOUND CTR (+) SOUND CTR (-) SOUND RL (+) SOUND RL (-) SOUND RR (+) SOUND RR (-) SOUND WOOFER (+) SOUND WOOFER (-)
BOSE AMP. B108, B109
SOUND FL (+) SOUND FL (-) SOUND FR (+) SOUND FR (-)
58 59 71 72
P L/Y BR R
B1 M12 M74 D31
P W BR R
29K 28K 35L 34L
M11 D1
L B/W BR B/R
L B/W L B/W BR B/R BR B/R
FRONT DOOR SPEAKER LH D8
TWEETER LH D3
FRONT DOOR SPEAKER RH D38
TWEETER RH D33
M204, D3, D33 BR BR BR
M215 W
REFER TO THE FOLLOWING.
B1, D1, D31 - SUPER MULTIPLE JUNCTION (SMJ)
B37, B425 W W
B108 BR
B109 BR
B434 W
B472 W
D8, D38, D53, D73 BR BR BR BR
TKWT6698E

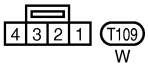
AV-AV-24









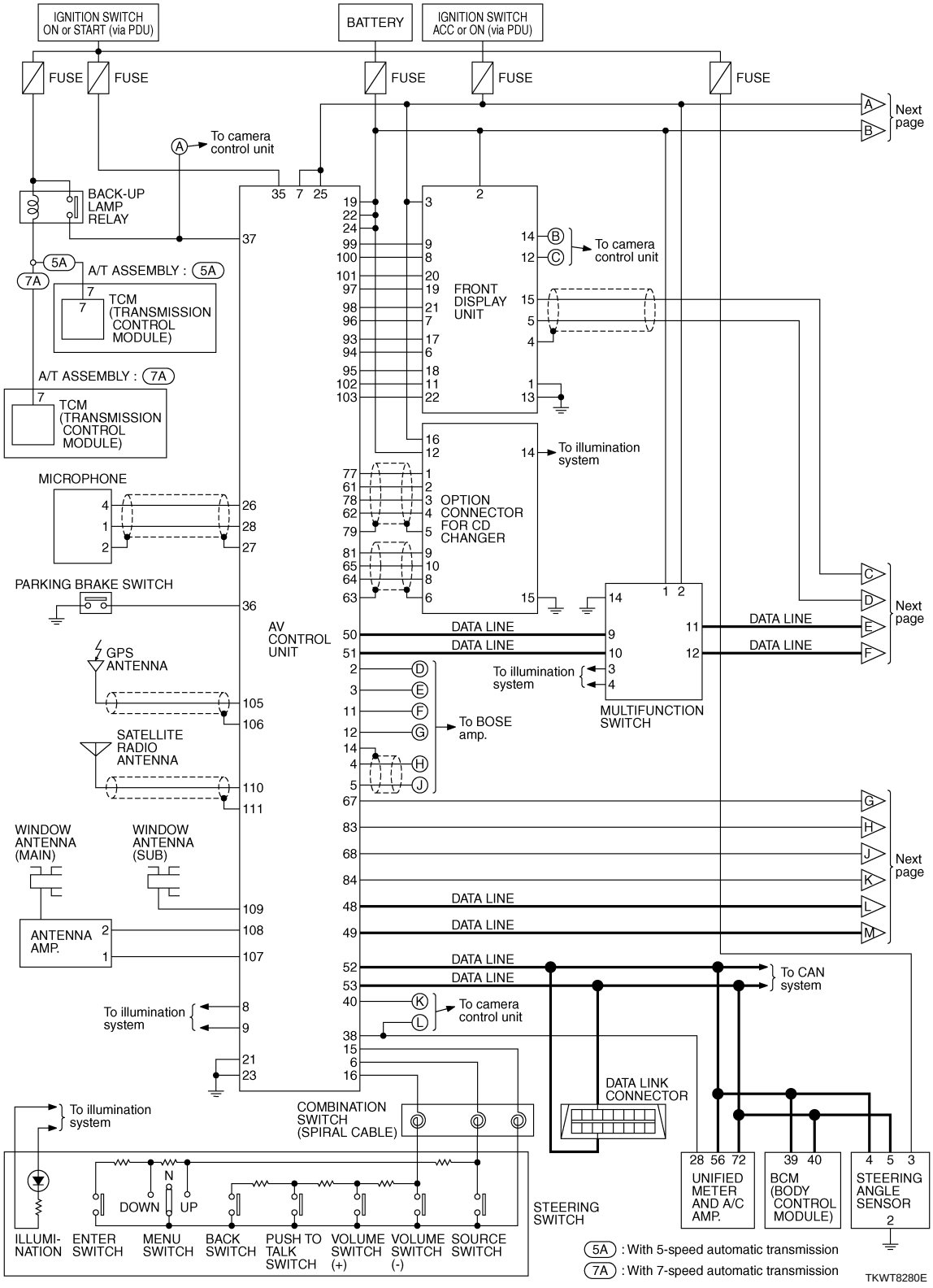


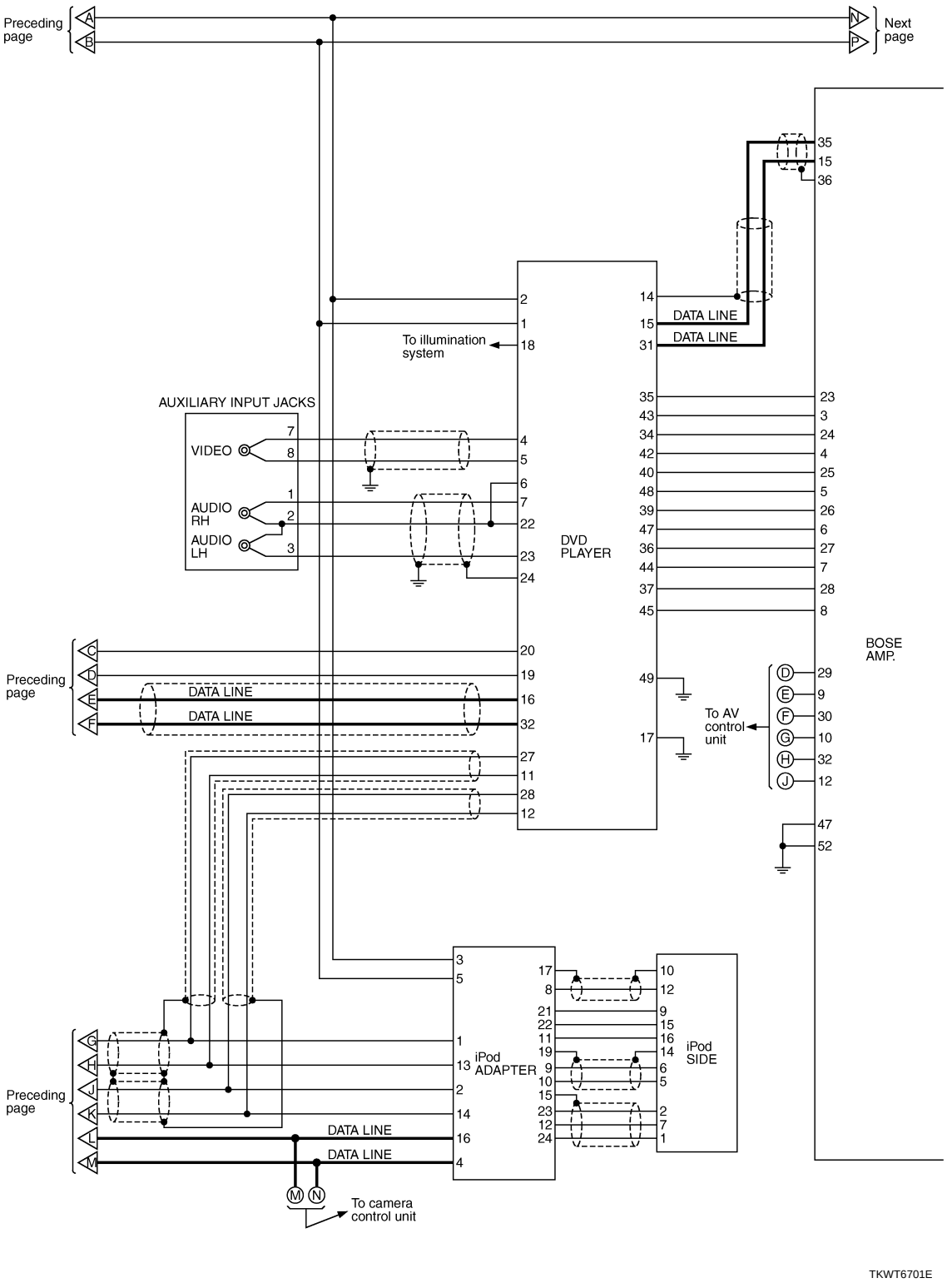
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6699E

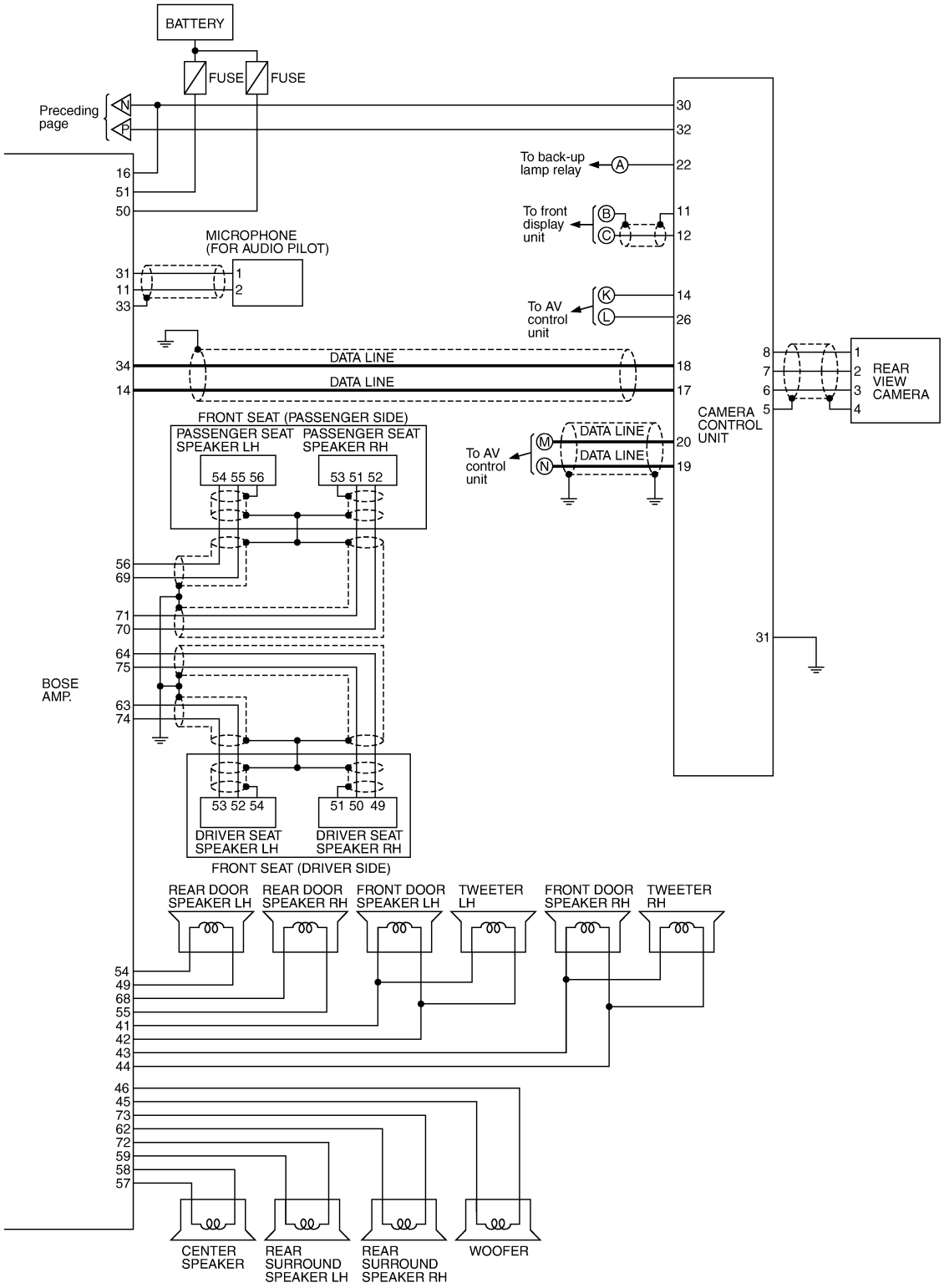
WITH NAVIGATION : Schematic - BOSE Surround Audio 5.1ch System -

INFOID:0000000004155800




Preceding page
A
B
N
P
Next page
35
15
36
2
1
18
To illumination system
14
15
31
DATA LINE
DATA LINE
AUXILIARY INPUT JACKS
VIDEO
AUDIO RH
AUDIO LH
7
8
1
2
3
4
5
6
7
22
23
24
DVD PLAYER
35
43
34
42
40
48
39
47
36
44
37
45
23
3
24
4
25
5
26
6
27
7
28
8
BOSE AMP.
Preceding page
C
D
E
F
20
19
16
32
DATA LINE
DATA LINE
49
17
To AV control unit
D
E
F
G
H
J
29
9
30
10
32
12
27
11
28
12
47
52
3
5
1
13
2
14
16
4
iPod ADAPTER
17
8
21
22
11
19
9
10
15
23
12
24
10
12
9
15
16
14
6
5
2
7
1
iPod SIDE
Preceding page
G
H
J
K
L
M
DATA LINE
DATA LINE
M
N
To camera control unit

TKWT6701E



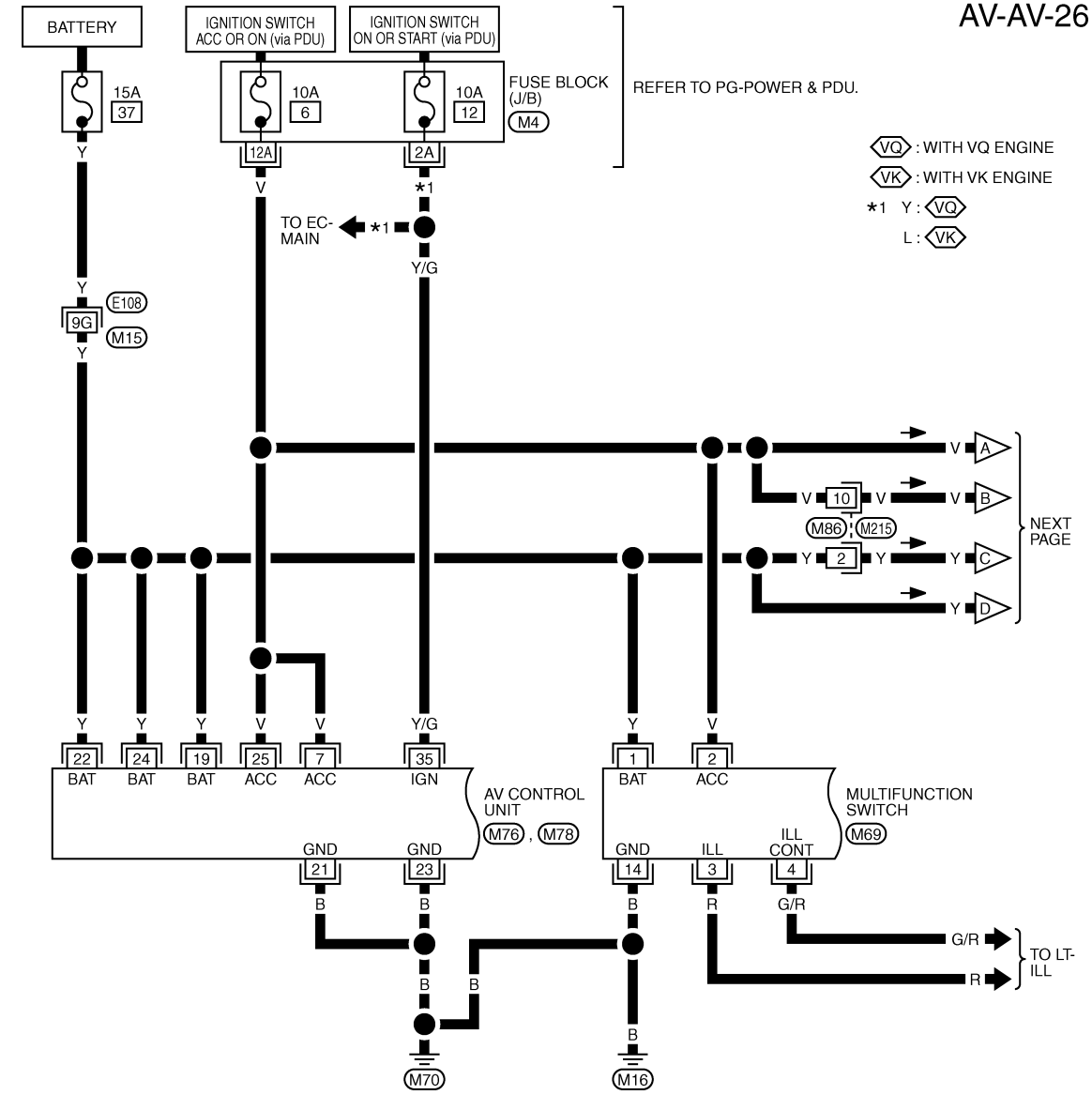
TKWT6702E

WITH NAVIGATION : Wiring Diagram - AV - / BOSE Surround Audio 5.1ch System

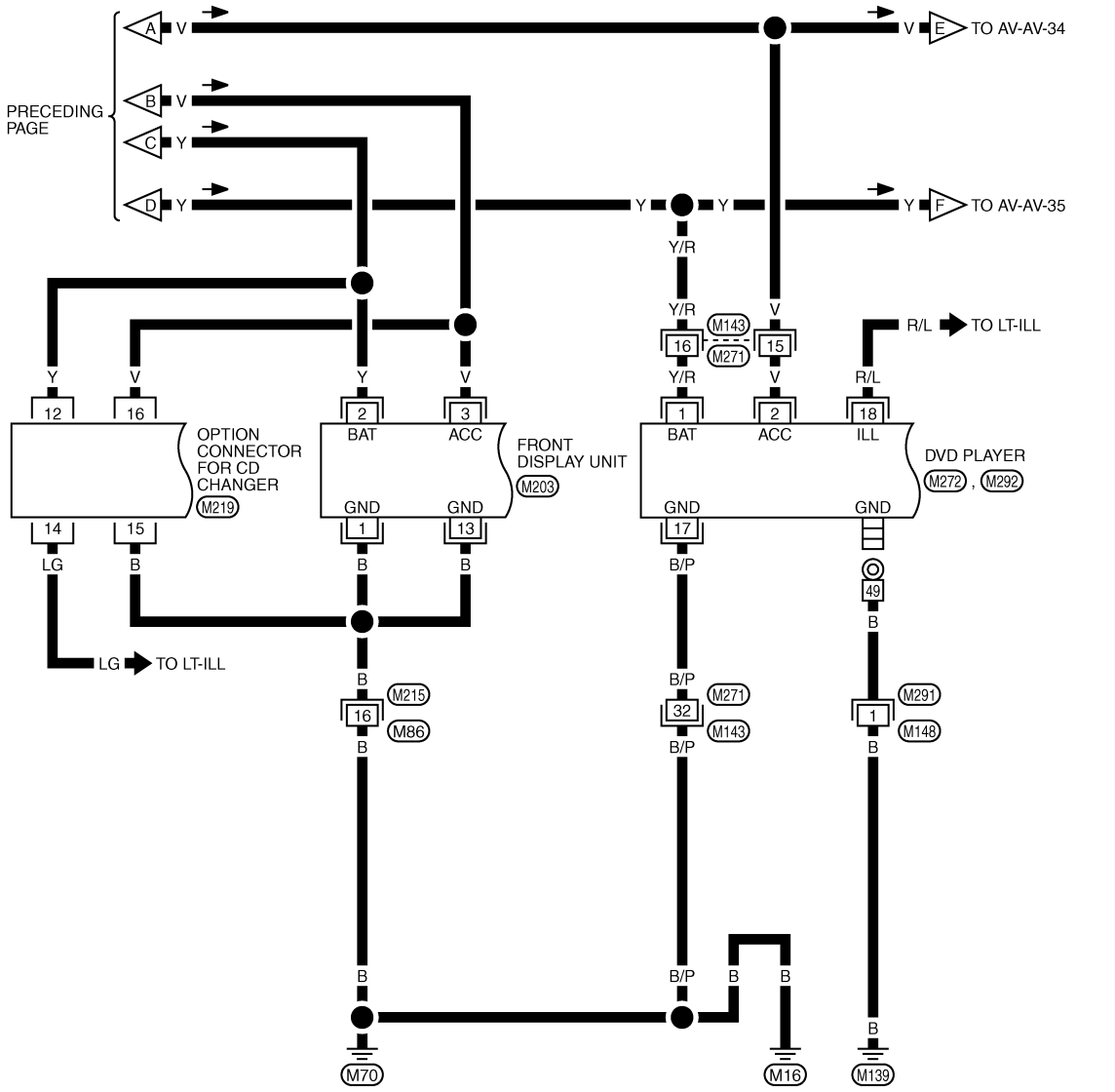
INFOID:0000000004155801

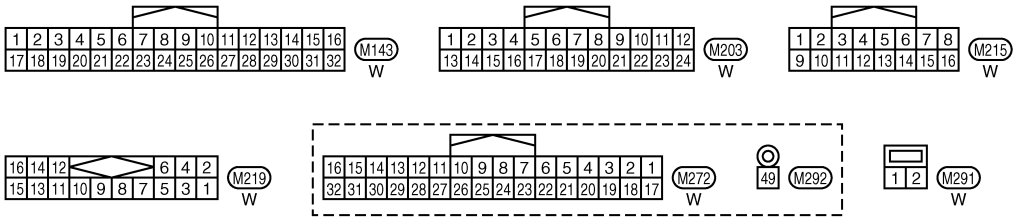
NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.



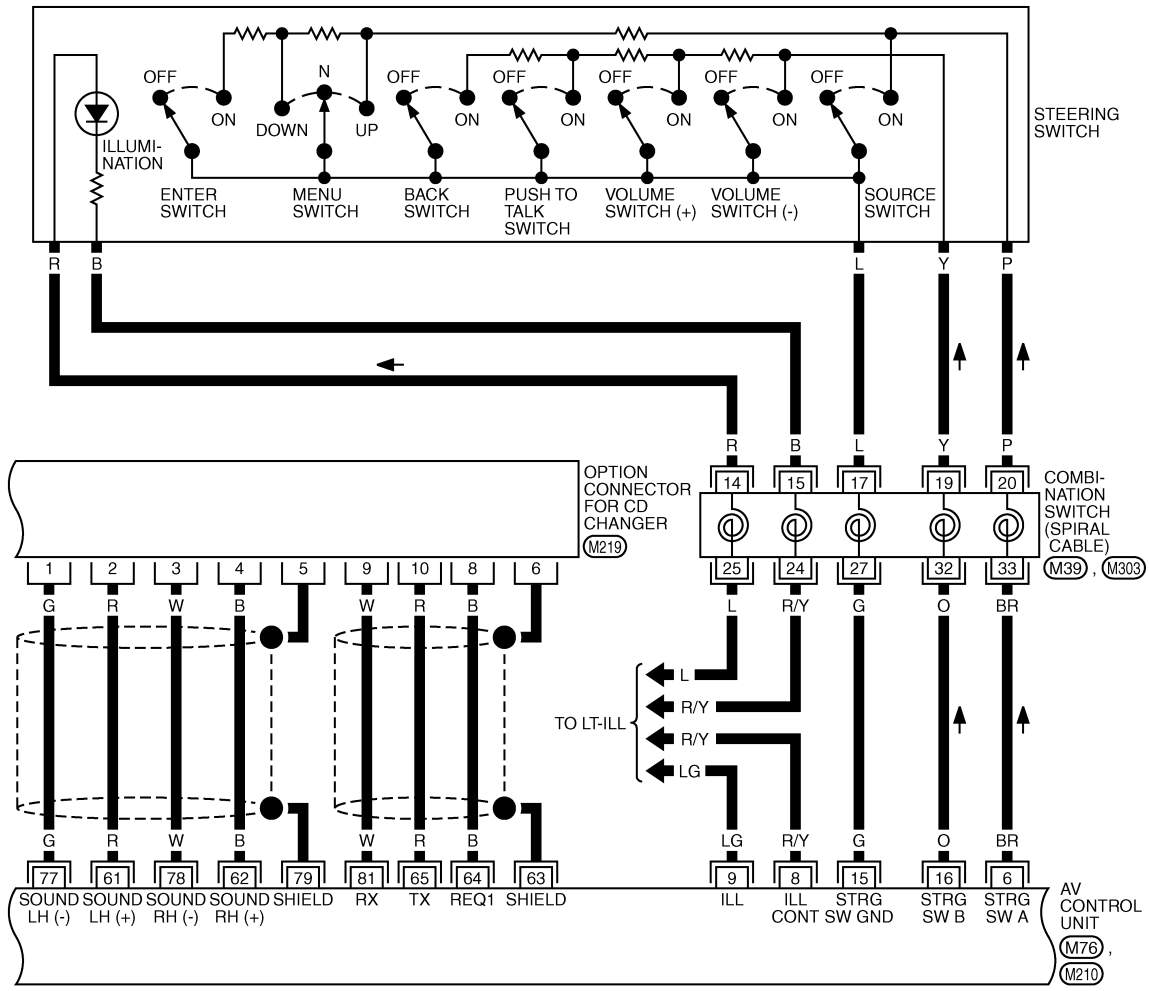
AV-AV-27

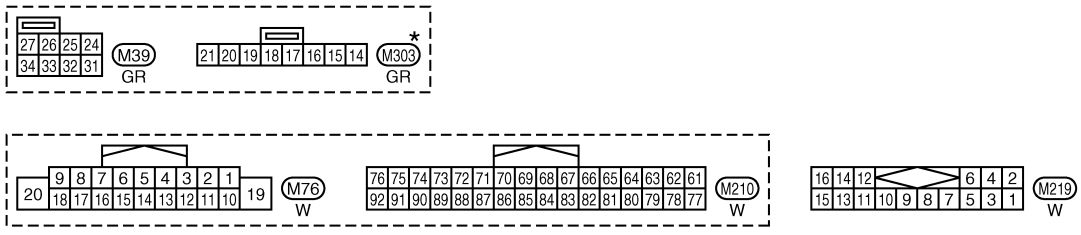




TKWT8282E

AV-AV-28

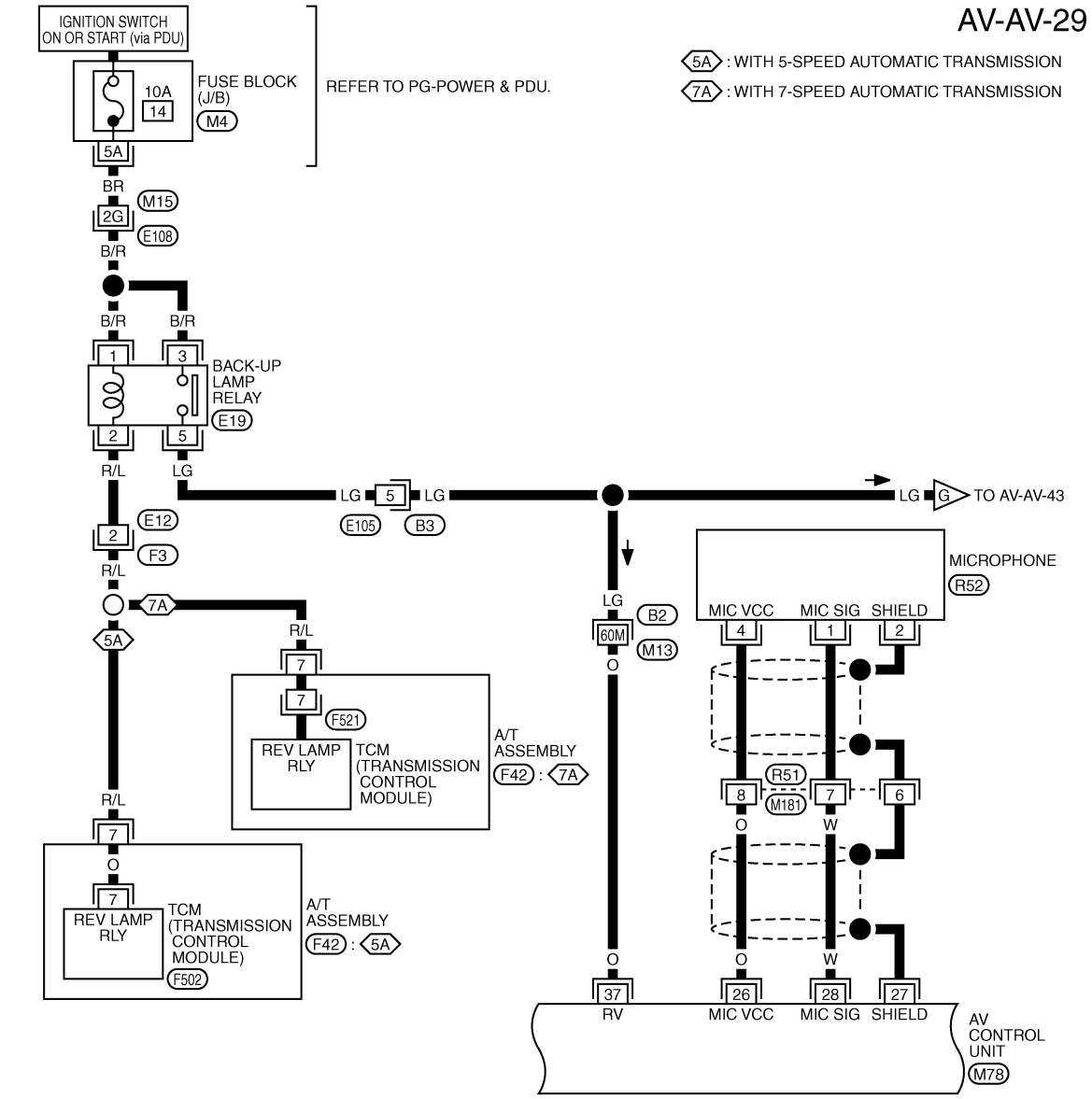


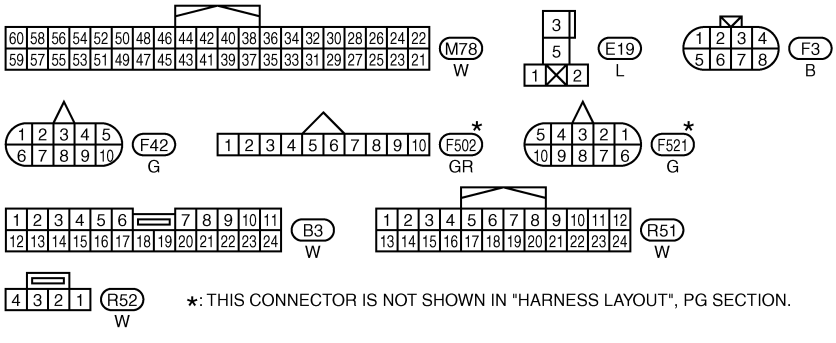


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8283E

AV-AV-29

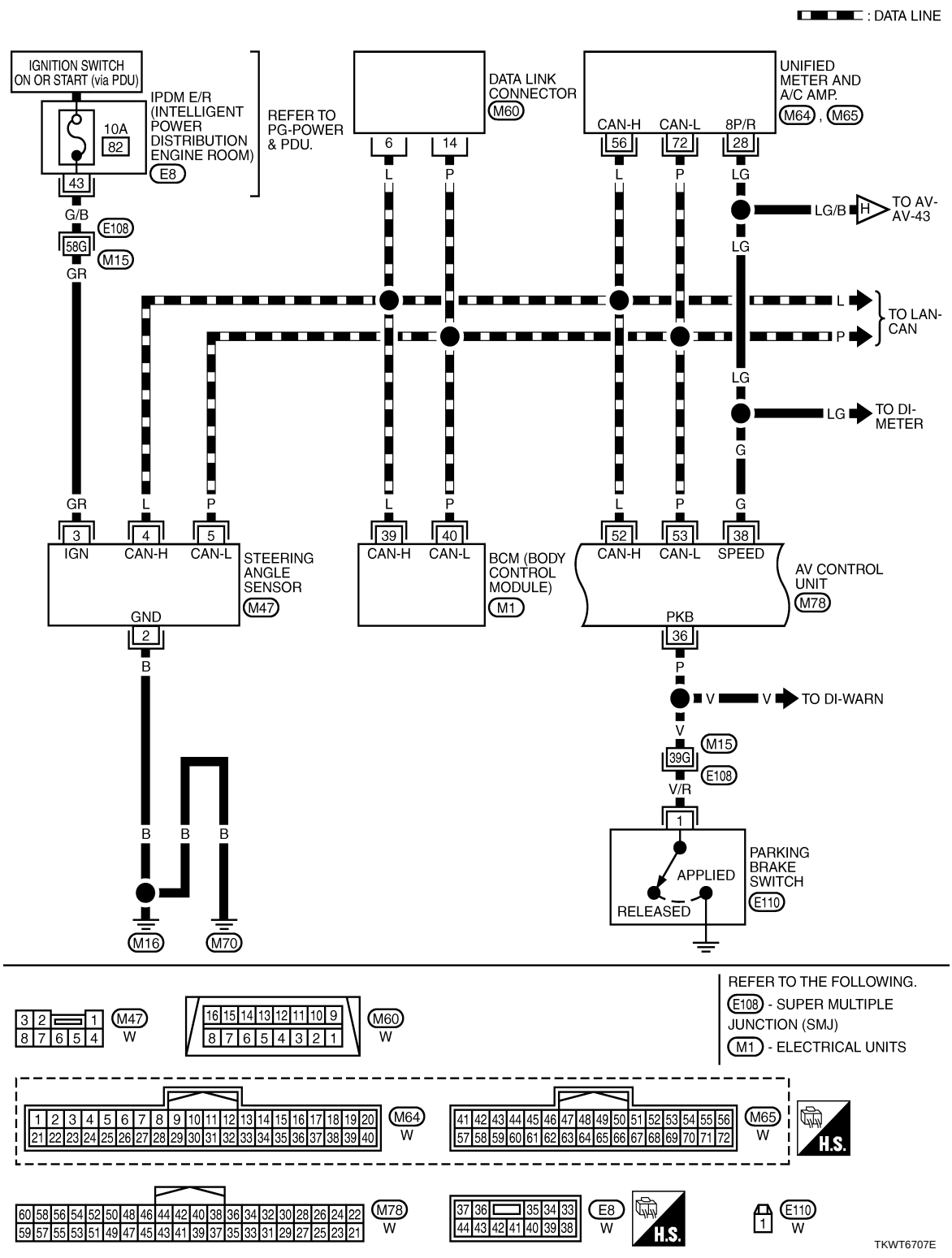




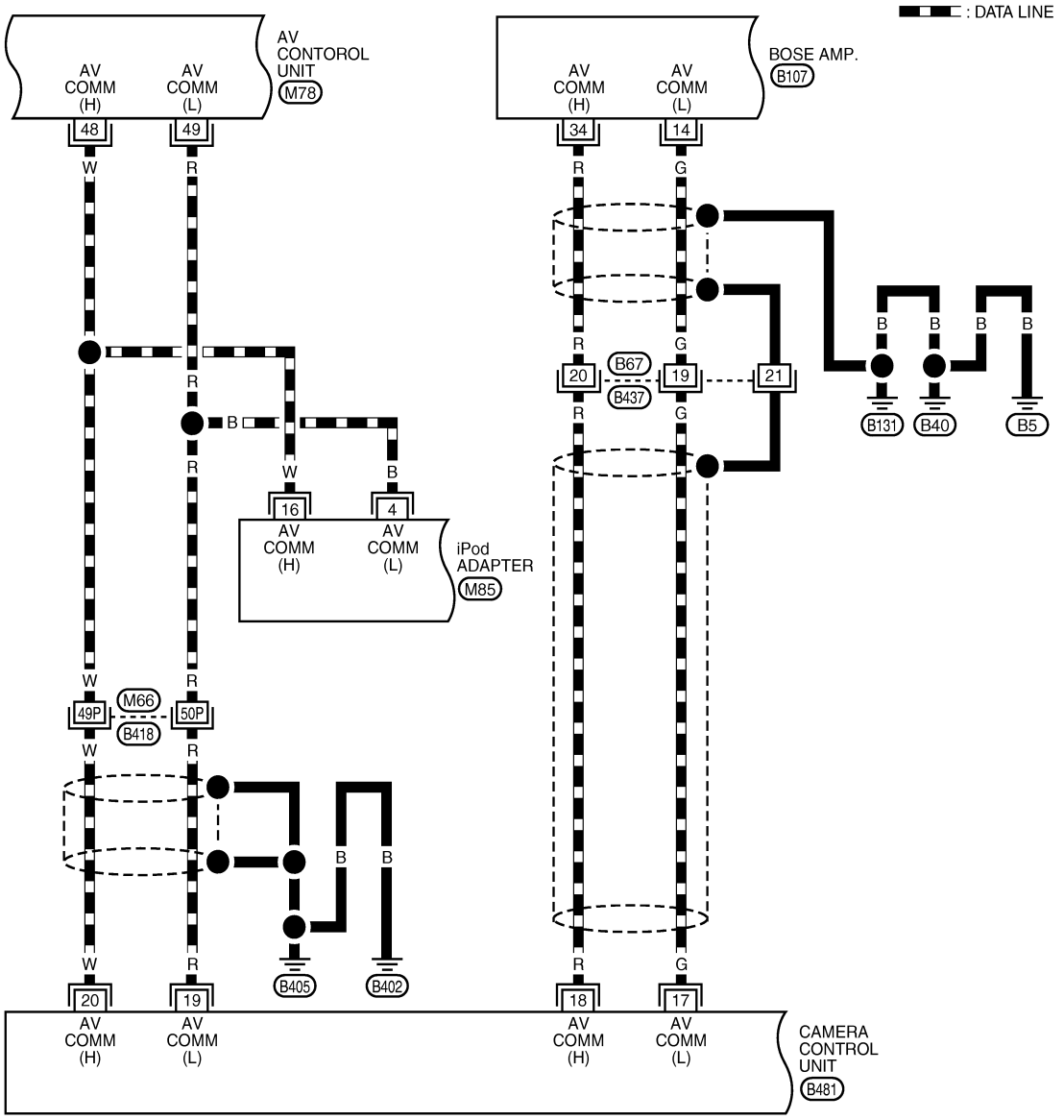
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

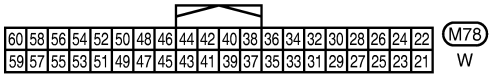
TKWT8284E

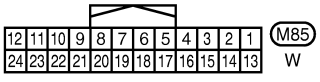
AV-AV-30

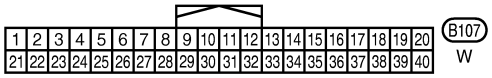

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56 72 28
G/B
E108
58G
M15
GR
L P L P LG
LG/B H TO AV-AV-43
LG
L P TO LAN-CAN
LG
LG TO DI-METER
G
GR L P L P L P G
3 4 5 39 40 52 53 38
IGN CAN-H CAN-L
STEERING ANGLE SENSOR M47
CAN-H CAN-L
BCM (BODY CONTROL MODULE) M1
CAN-H CAN-L SPEED
AV CONTROL UNIT M78
GND
2
PKB
36
B
P
V V TO DI-WARN
V
M15
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B B B
M16 M70
M47 W
M60 W
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M64 W
M65 W
H.S.
M78 W
E8 W
H.S.
E110 W
TKWT6707E

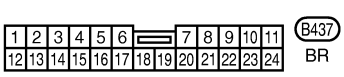
AV-AV-31

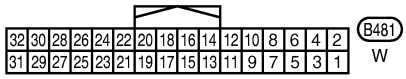








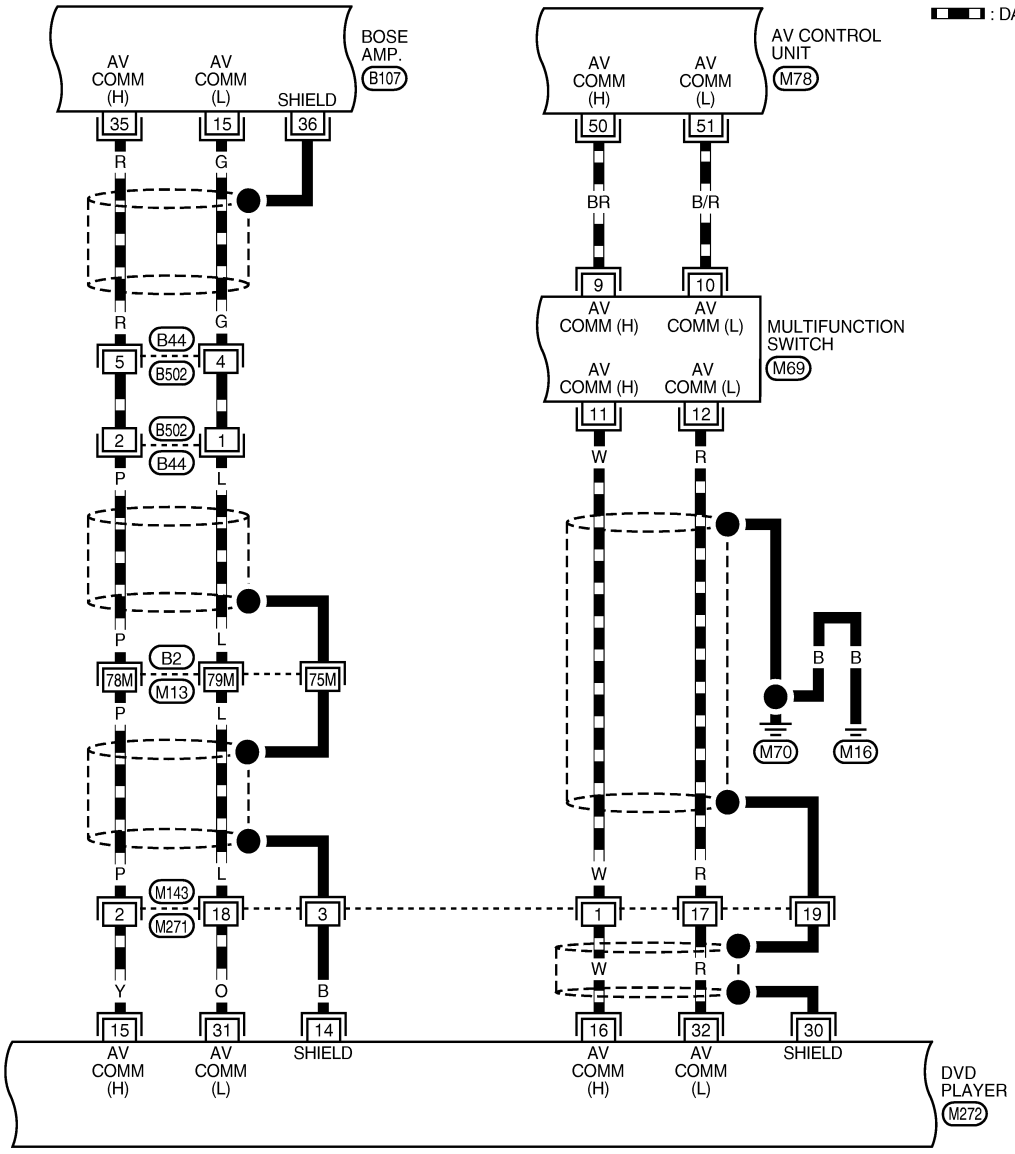


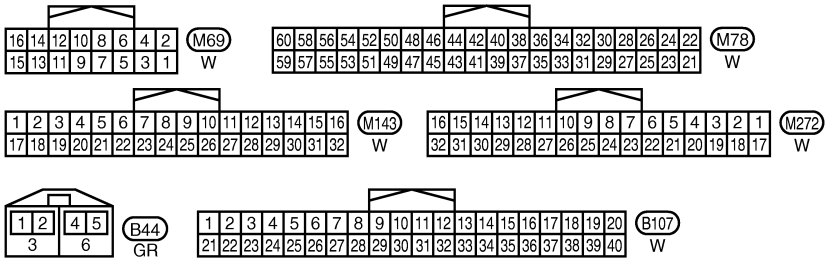


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6708E

AV-AV-32

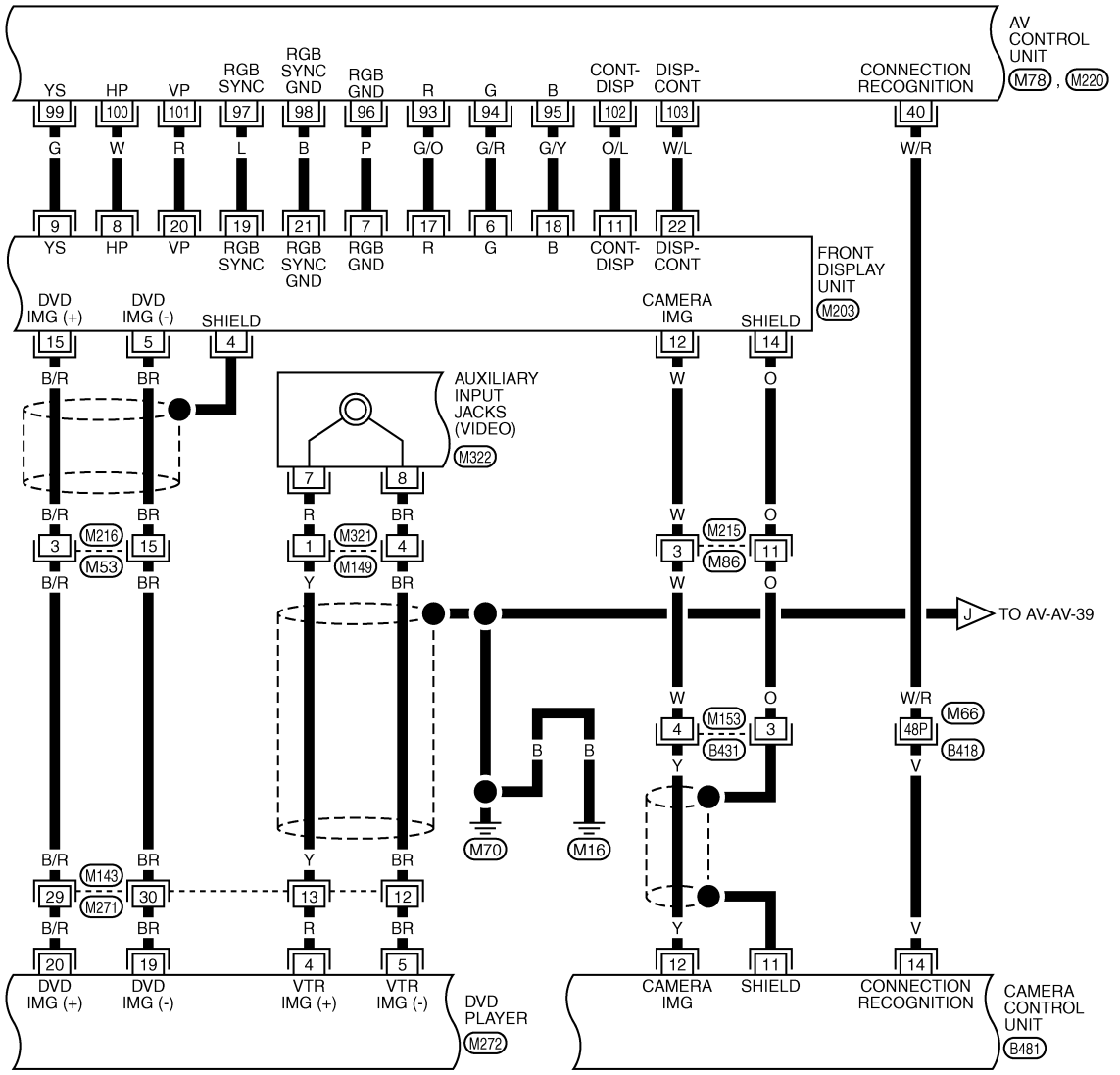


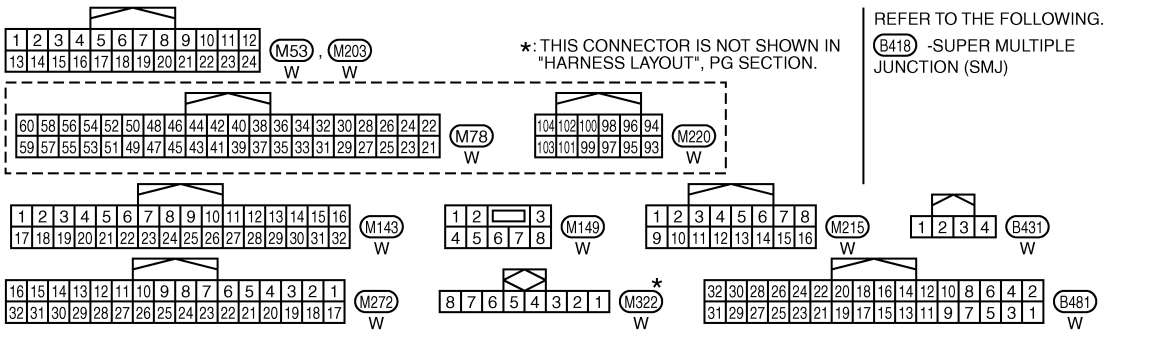


REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6709E

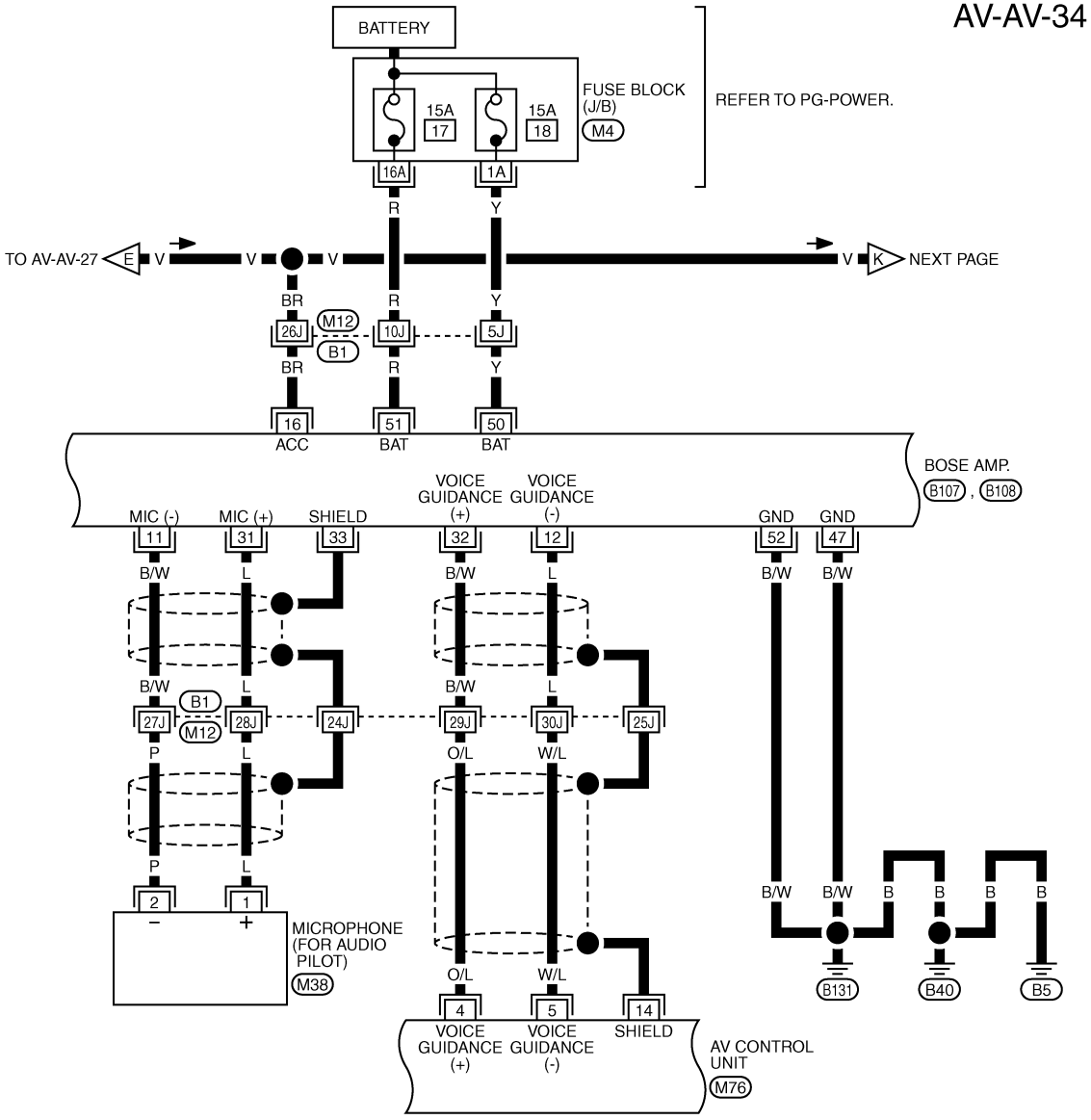
AV-AV-33

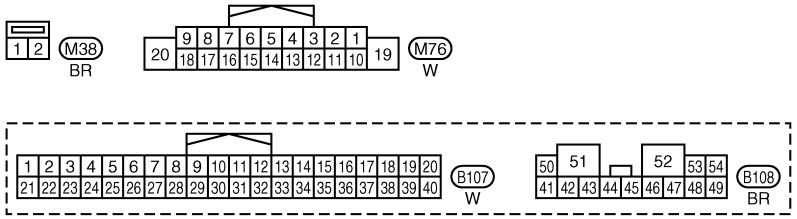




TKWT8285E

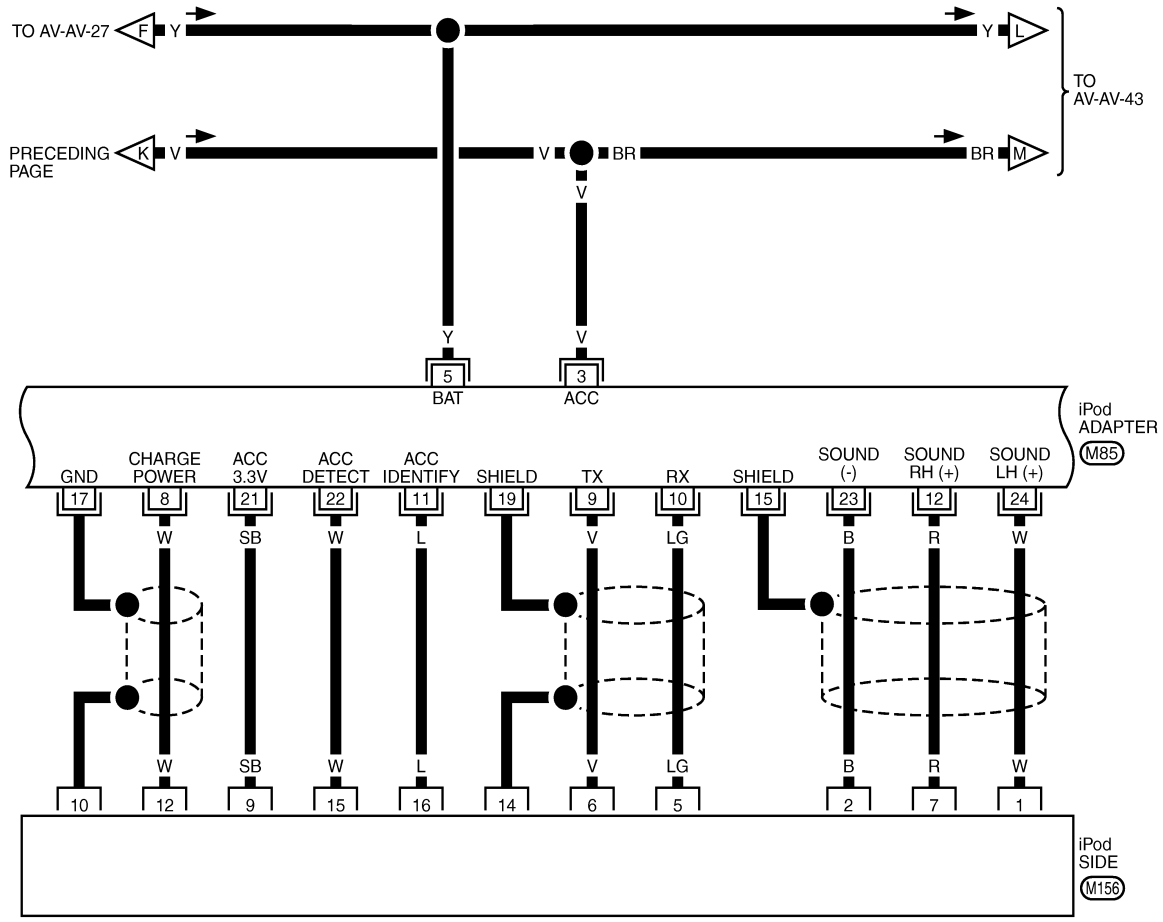
AV-AV-34

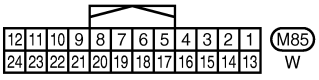


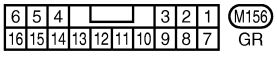


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8286E

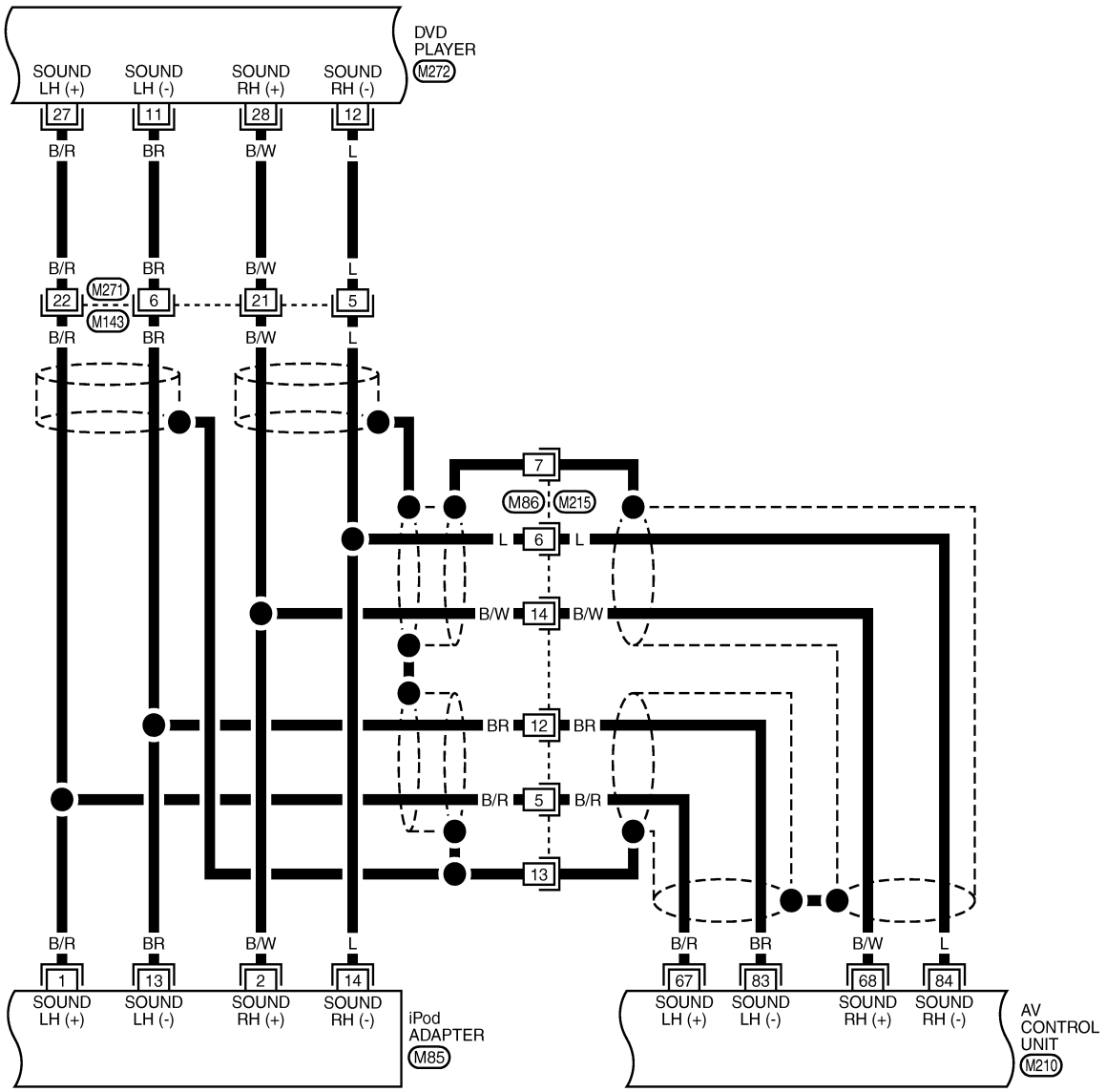

TO AV-AV-27
F
Y
Y
L
TO
AV-AV-43
PRECEDING
PAGE
K
V
V
BR
BR
M
V
Y
V
5
BAT
3
ACC
iPod
ADAPTER
M85
GND
CHARGE
POWER
ACC
3.3V
ACC
DETECT
ACC
IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND
(-)
SOUND
RH (+)
SOUND
LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod
SIDE
M156

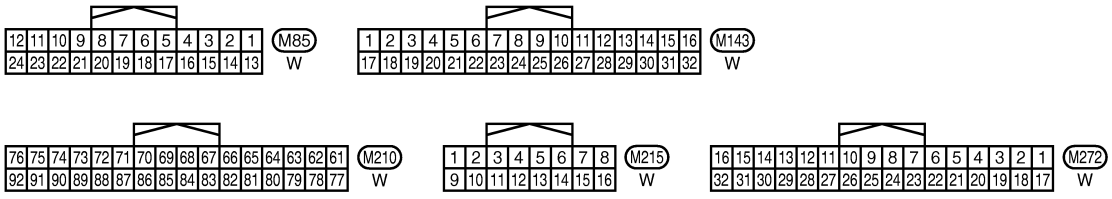

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6713E

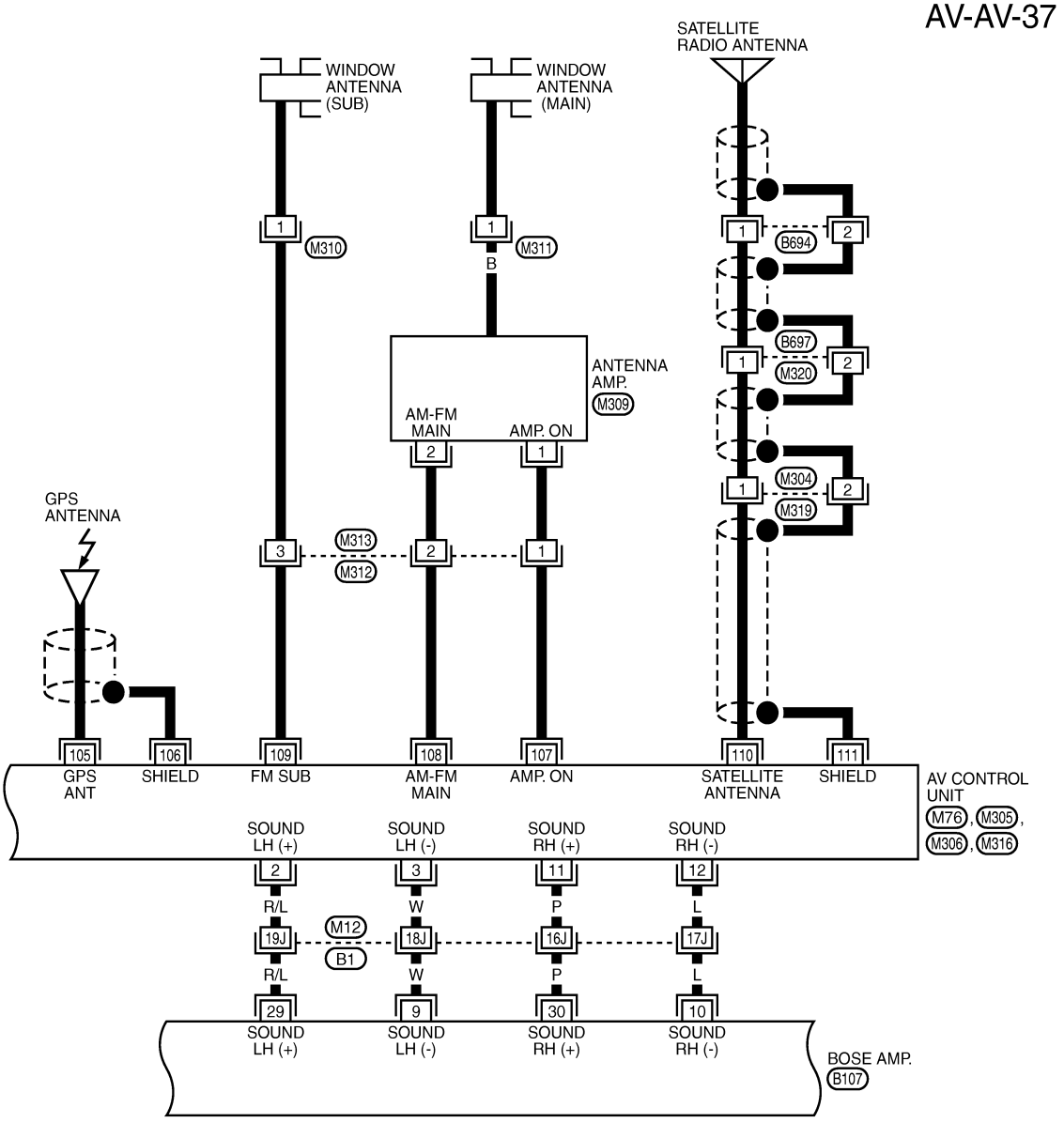
AV-AV-36

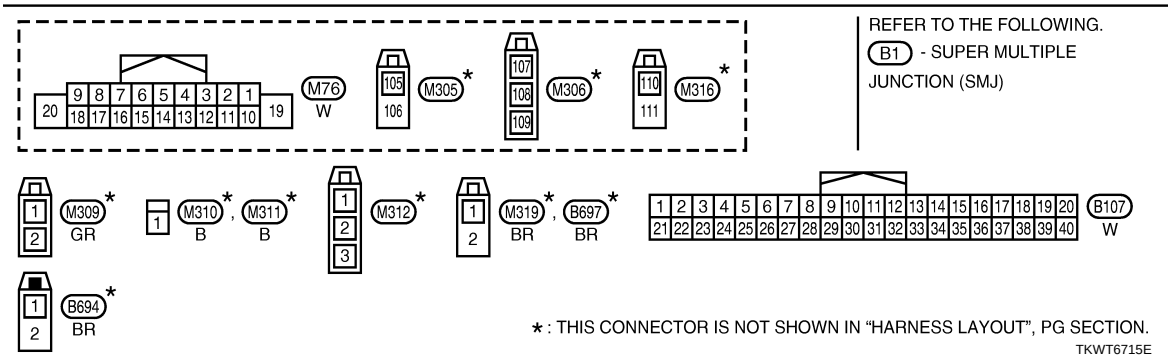




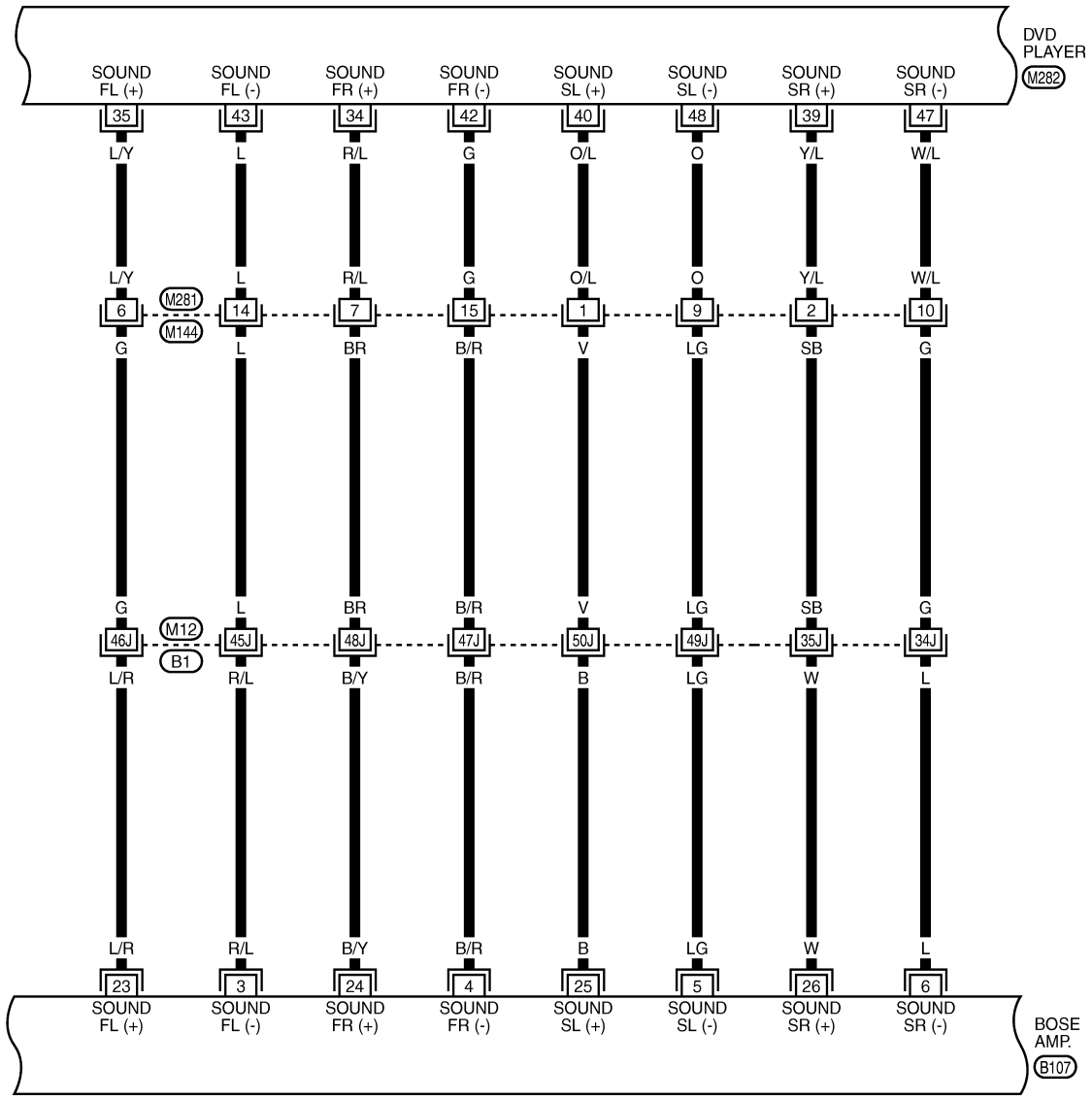
TKWT6714E

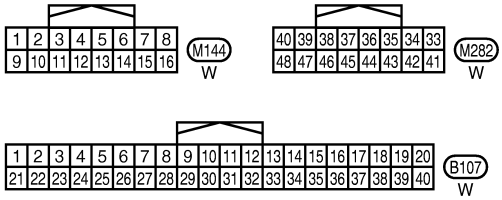
AV-AV-37


SATELLITE RADIO ANTENNA
WINDOW ANTENNA (SUB)
WINDOW ANTENNA (MAIN)
M310
M311
B
B694
B697
M320
M304
M319
ANTENNA AMP.
M309
AM-FM MAIN
AMP. ON
M313
M312
GPS ANTENNA
105 GPS ANT
106 SHIELD
109 FM SUB
108 AM-FM MAIN
107 AMP. ON
110 SATELLITE ANTENNA
111 SHIELD
AV CONTROL UNIT
M76, M305, M306, M316
SOUND LH (+)
SOUND LH (-)
SOUND RH (+)
SOUND RH (-)
R/L
W
P
L
M12
B1
19J
18J
16J
17J
29
9
30
10
BOSE AMP.
B107


M76 W
M305 *
M306 *
M316 *
M309 * GR
M310 *, M311 * B
M312 *
M319 *, B697 * BR
B694 * BR
B107 W
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)
* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.
TKWT6715E

AV-AV-38

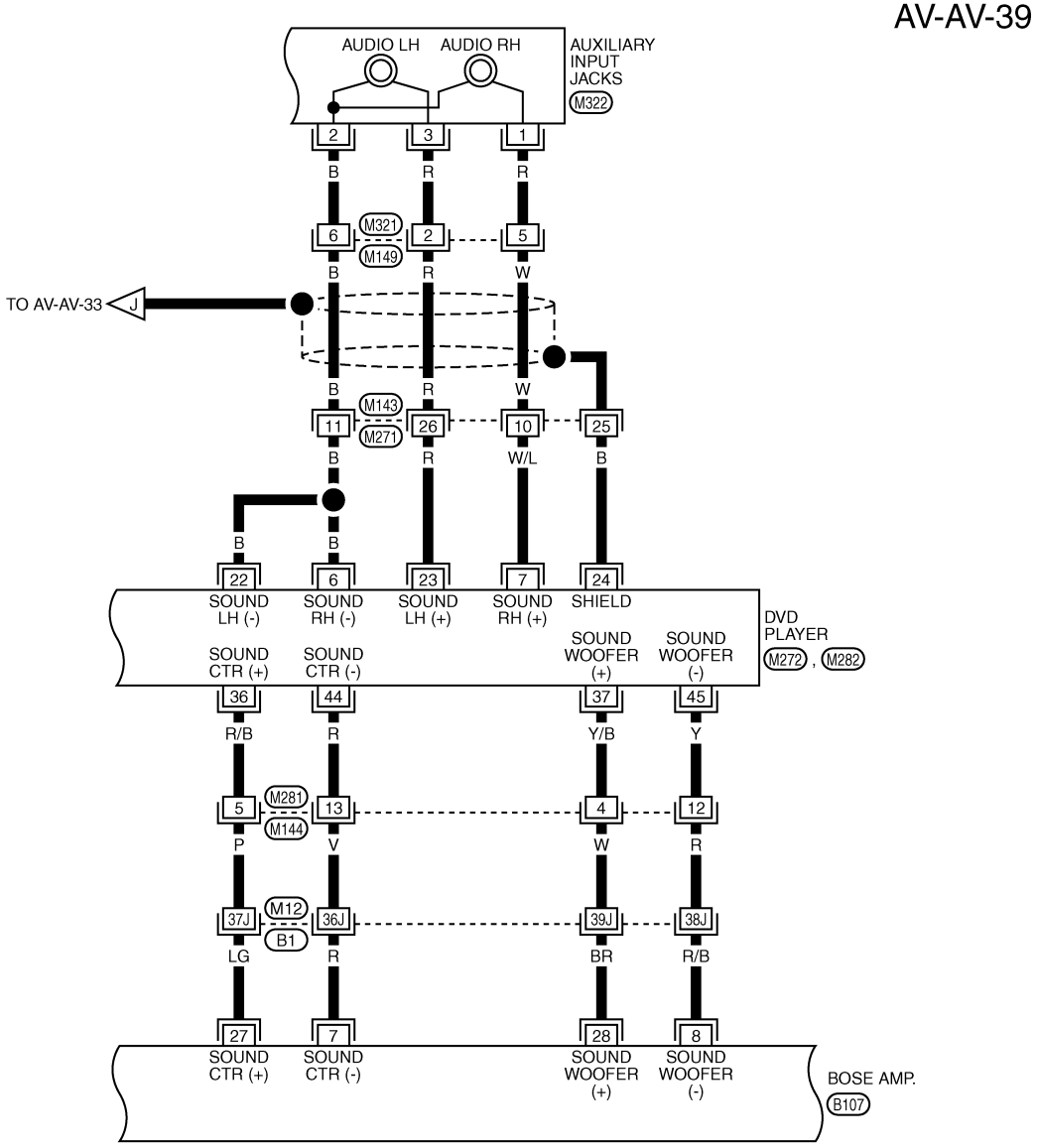


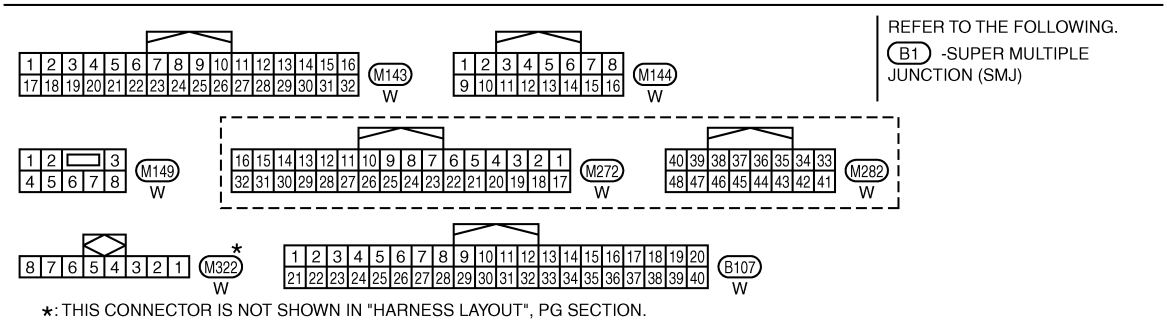


REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6716E

AV-AV-39

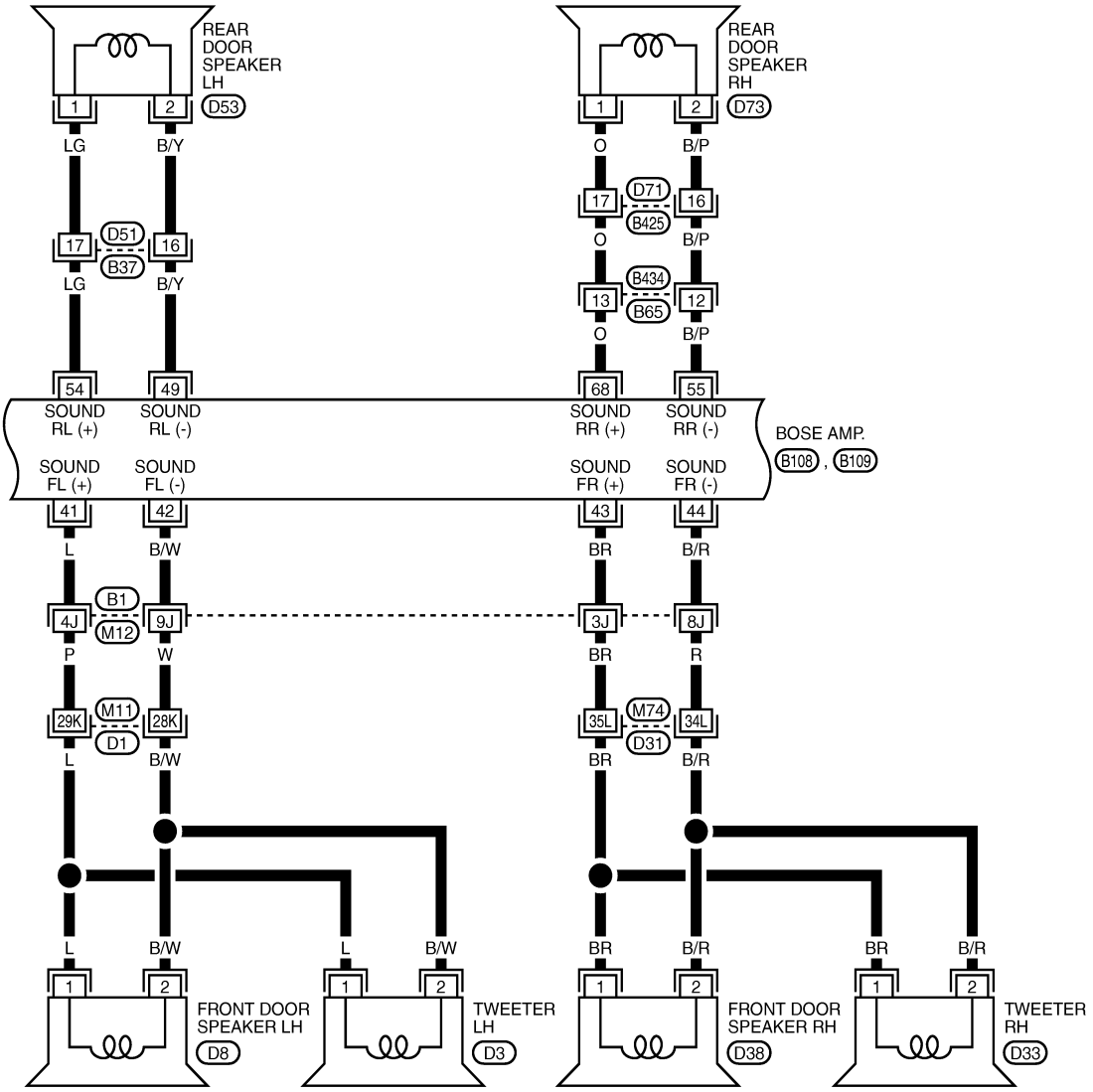


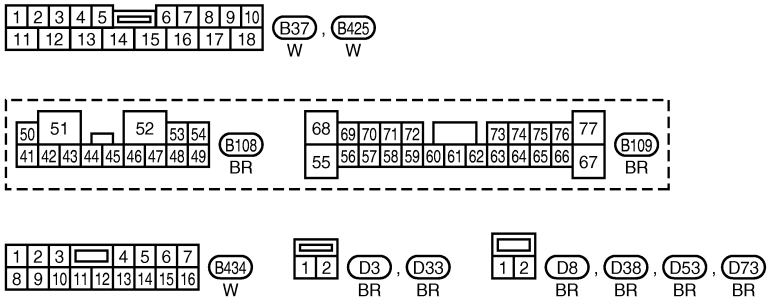


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8287E

AV-AV-40

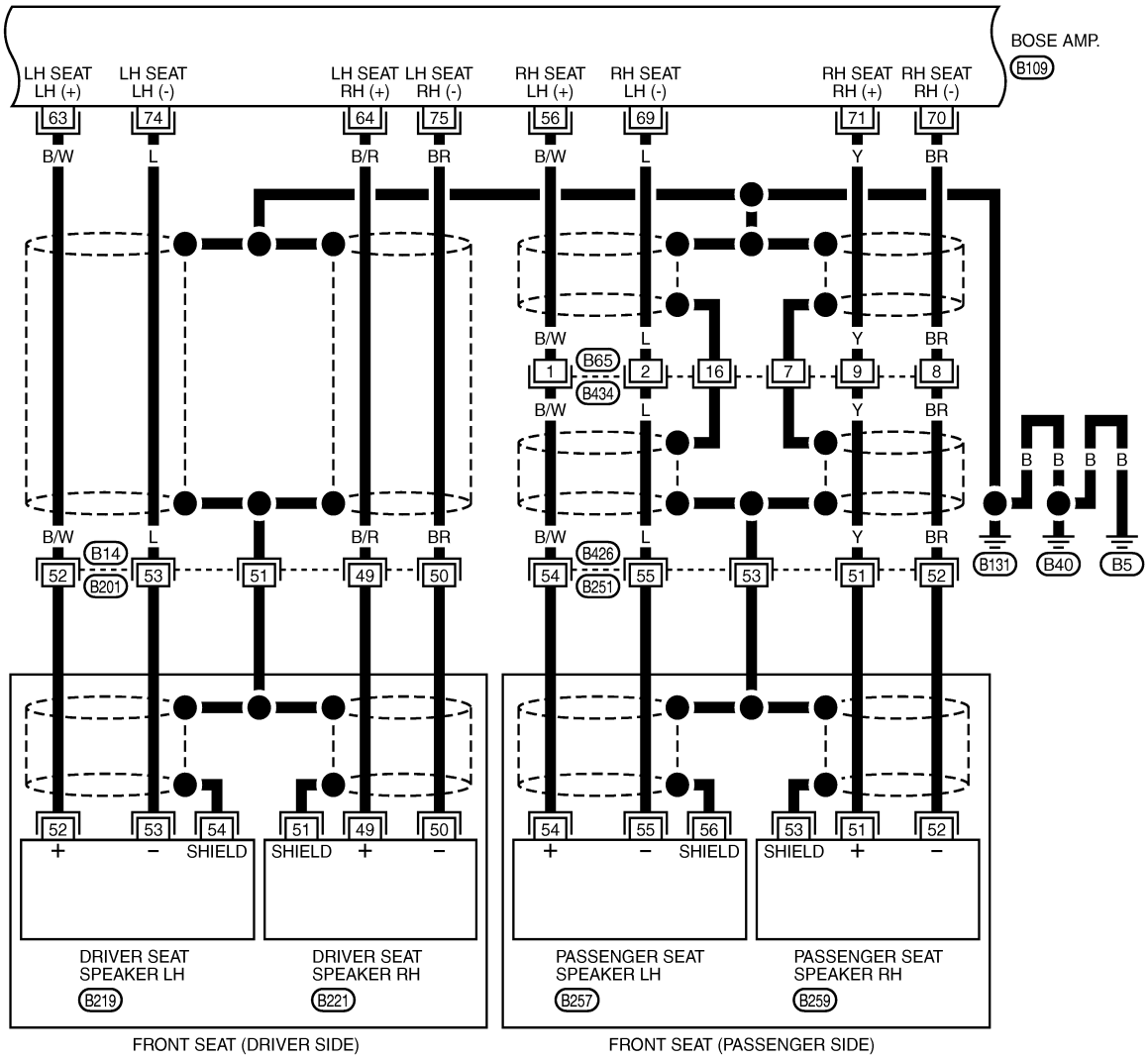


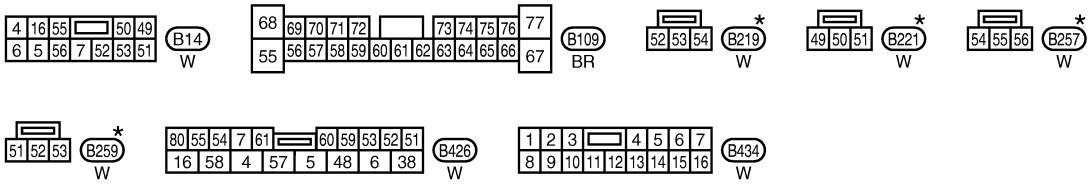


REFER TO THE FOLLOWING.
B1 , D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6718E

AV-AV-41

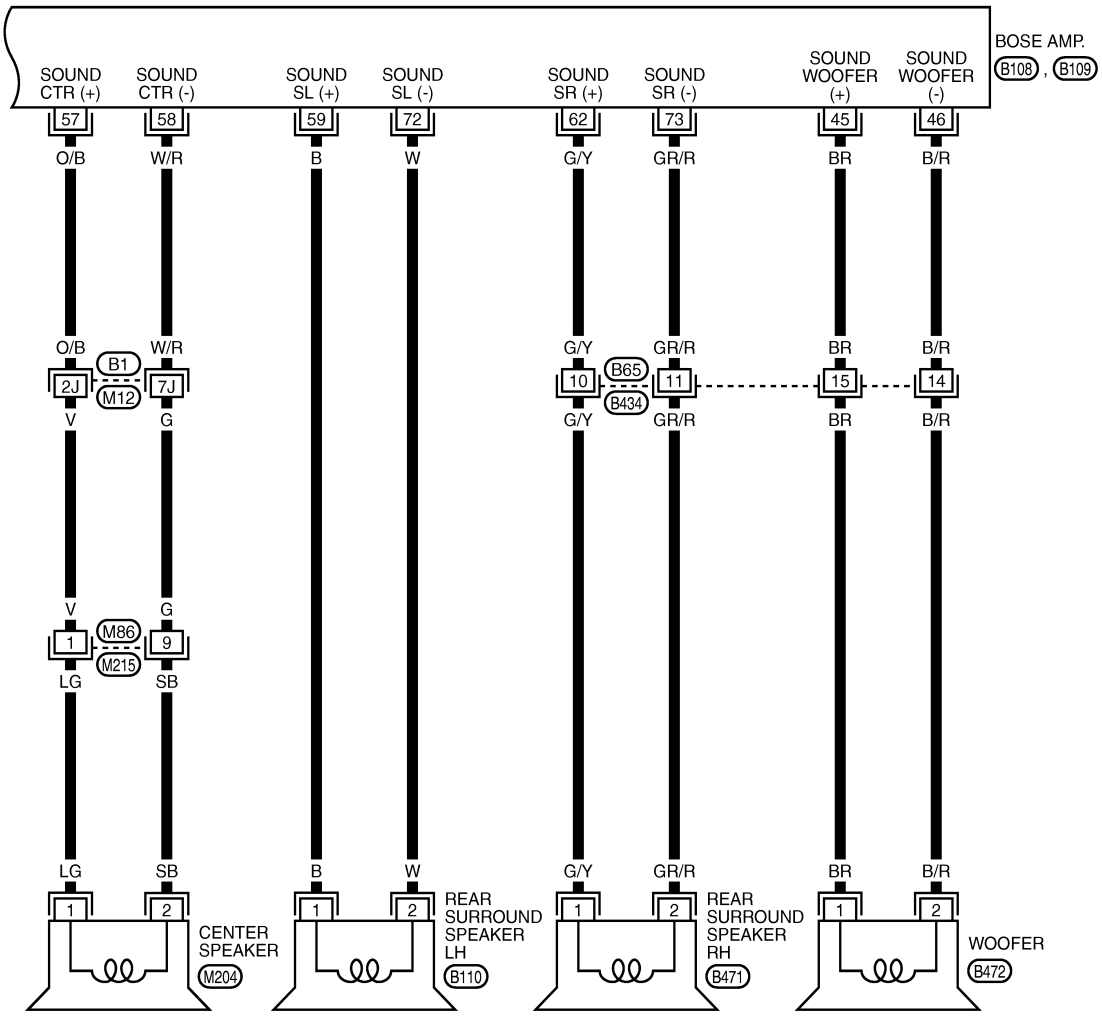


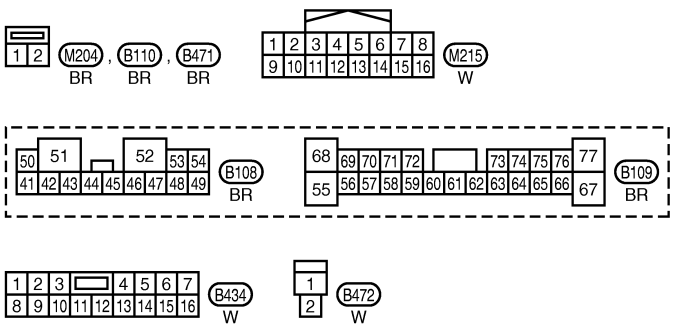


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6719E

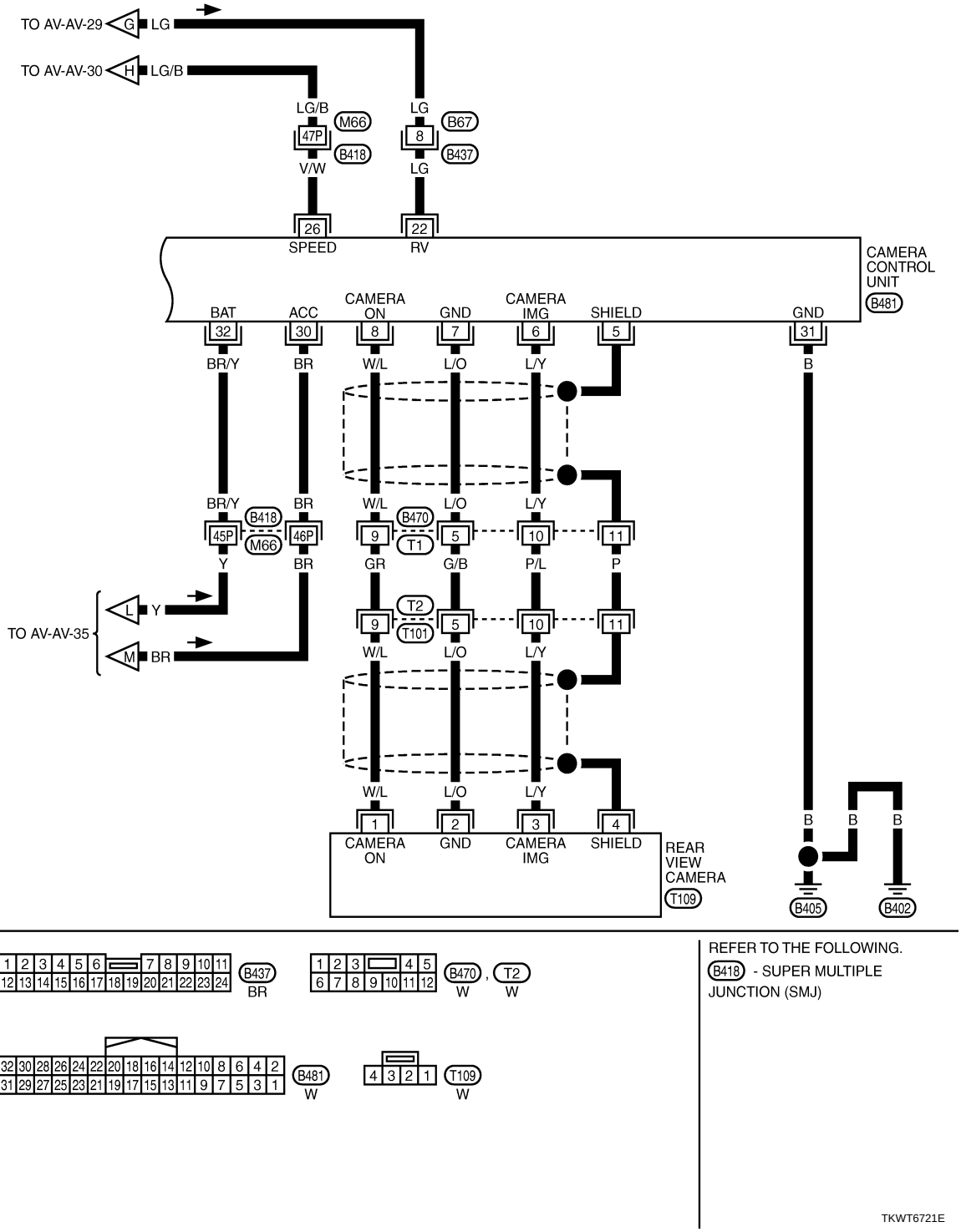
AV-AV-42





REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6720E



WITH NAVIGATION : Fail-Safe

INFOID:0000000004155802

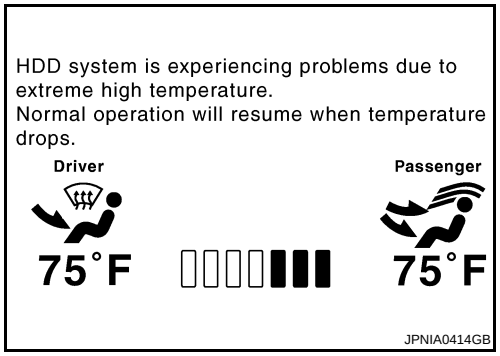
When the ambiance temperature becomes extremely low or extremely high, or when HDD is malfunctioning, AV control unit displays the message and limits the AV control unit function.

FAIL-SAFE CONDITIONS

- When the ambiance temperature is –20°C (–4°F) or lower, or when it is 70°C (158°F) or higher
- When HDD is malfunctioning

Display

The messages displayed on fail-safe conditions are as shown below:



Fail-safe mode	Display (display of the fail-safe condition)
When HDD temperature is low	HDD system is experiencing problems due to extreme low temperature. Normal operation will resume when temperature rises.
When HDD temperature is high	HDD system is experiencing problems due to extreme high temperature. Normal operation will resume when temperature drops.
When HDD is malfunctioning	HDD system is not functioning. Please contact your dealer for assistance.

DESCRIPTION OF CONTROLS

Function		When Fail-safe Function is activated
Air conditioner	Operation	Only multifunction switch (preset switch) can be operated.
	Display	• LED of multifunction switch (preset switch) illuminates. • Aimed temperature, blow angle, and flow rate are displayed in simplified mode.
Audio	Operation	Only ON/OFF and volume control operations by multifunction switch (preset switch) are possible.
	Display	No display (“Fail-safe mode” is displayed)
Camera	Operation	Image tone cannot be controlled.
	Display	Cannot be superimposed. (warning display, tone control display)
Hands-free phone	Operation	Cannot be operated.
Navigation	Operation	Cannot be operated.
Self diagnosis		The display in simplified mode of fail-safe condition
CONSULT-III diagnosis		Cannot be operated.

Ability Operation Mode

There is an ability operation mode for Fail-safes due to low or high ambiance temperature.
If HDD data can be read, fail-safe is shown, then normal displays are displayed only for functions which can be operated.

RELEASE CONDITIONS OF FAIL-SAFE

Fail-safe is released on following conditions and normal mode is restored.

When the temperature of HDD is low or high

If the ambient temperature becomes out of fail-safe condition range, normal mode is restored.

When HDD is malfunctioning

If the malfunction disappears, normal mode is restored.

NOTE:

- If fail-safe mode due to HDD malfunction is seen continuously, replace AV control unit.
- If fail-safe mode due to HDD malfunction is seen temporarily, check the “Error History” of Confirmation/ Adjustment mode. If this is normal, then continue the normal operation, observing the function. (It might be a temporary malfunction of HDD.)

WITH NAVIGATION : DTC Index

INFOID:0000000004155803

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	AV-78, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [1010]	AV-79, "Diagnosis Procedure"
U1310	CONTROL UNIT (AV) [U1310]	AV-80, "WITH NAVIGATION : DTC Logic"
U1200	Control Unit FLASH-ROM [1200]	AV-82, "WITH NAVIGATION : DTC Logic"
U1201	Gyro NO CONN [1201]	AV-84, "DTC Logic"
U1216	CAN CONT [U1216]	AV-85, "WITH NAVIGATION : DTC Logic"
U1217	BLUETOOTH CONN [U1217]	AV-87, "DTC Logic"
U1218	HDD CONN [U1218]	AV-88, "DTC Logic"
U1219	HDD READ [U1219]	AV-89, "DTC Logic"
U1220	XM SERIAL COMM [U1220]	AV-90, "DTC Logic"
U121A	HDD WRITE [U121A]	AV-91, "DTC Logic"
U121B	HDD COMM [U121B]	AV-92, "DTC Logic"
U121C	HDD ACCESS [U121C]	AV-93, "DTC Logic"
U121D	DSP CONN [U121D]	AV-94, "DTC Logic"
U121E	DSP COMM [U121E]	AV-95, "DTC Logic"
U121F	INTERNAL COMM [U121F]	AV-96, "DTC Logic"
U1204	GPS COMM [U1204]	AV-97, "DTC Logic"
U1205	GPS ROM [U1205]	AV-98, "DTC Logic"
U1206	GPS RAM [U1206]	AV-99, "DTC Logic"
U1207	GPS RTC [U1207]	AV-100, "DTC Logic"
U1243	FRONT DISP CONN [U1243]	AV-102, "WITH NAVIGATION : DTC Logic"
U1244	GPS ANTENNA CONN [U1244]	AV-105, "DTC Logic"
U1250	CAMERA CONT. CONN [U1250]	AV-106, "DTC Logic"
U1258	XM ANTENNA CONN [U1258]	AV-109, "DTC Logic"
U1300 U121F	• AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F]	AV-110, "WITH NAVIGATION : Description"
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	AV-110, "WITH NAVIGATION : Description"
U1300 U1248	• AV COMM CIRCUIT [U1300] • DVD DECK CONN [U1248]	AV-110, "WITH NAVIGATION : Description"
U1300 U124E	• AV COMM CIRCUIT [U1300] • AMP CONN [U124E]	AV-110, "WITH NAVIGATION : Description"
U1300 U1252	• AV COMM CIRCUIT [U1300] • REAR CAMERA LAN CONN [U1252]	AV-110, "WITH NAVIGATION : Description"
U1300 U1254	• AV COMM CIRCUIT [U1300] • IPOD CONN [U1254]	AV-110, "WITH NAVIGATION : Description"
U1300 U1252 U1254	• AV COMM CIRCUIT [U1300] • REAR CAMERA LAN CONN [U1252] • IPOD CONN [U1254]	AV-110, "WITH NAVIGATION : Description"
U1300 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPOD CONN [U1254]	AV-110, "WITH NAVIGATION : Description"

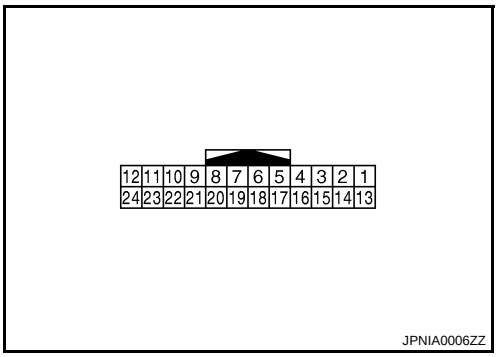
DTC	Display item	Refer to
U1300 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPOD CONN [U1254]	AV-110, "WITH NAVIGATION : Description"
U1300 U1248 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPOD CONN [U1254]	AV-110, "WITH NAVIGATION : Description"
U1300 U1240 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPOD CONN [U1254]	AV-110, "WITH NAVIGATION : Description"
U1300 U1240 U1248 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPOD CONN [U1254]	AV-110, "WITH NAVIGATION : Description"
U1300 U121F U1240 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F] • SWITCH CONN [U1240] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPOD CONN [U1254]	AV-110, "WITH NAVIGATION : Description"
U1300 U121F U1240 U1248 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F] • SWITCH CONN [U1240] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPOD CONN [U1254]	AV-110, "WITH NAVIGATION : Description"

FRONT DISPLAY UNIT
WITHOUT NAVIGATION

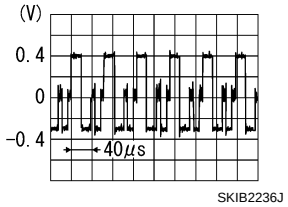
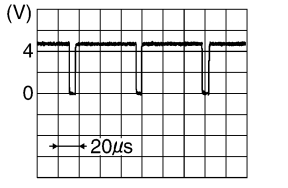
WITHOUT NAVIGATION : Reference Value

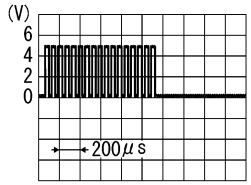
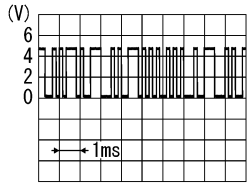
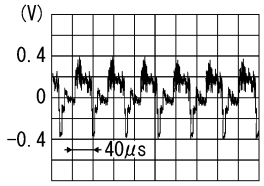
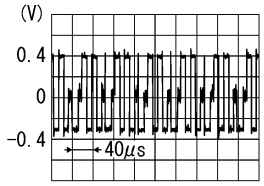
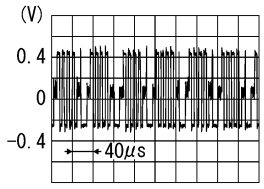
INFOID:0000000004155804

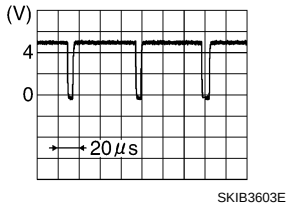
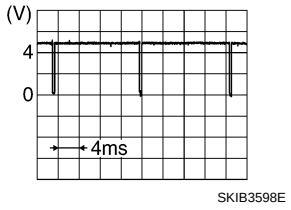
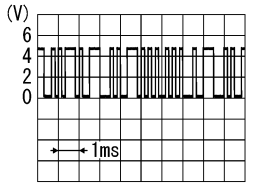
TERMINAL LAYOUT



PHYSICAL VALUES

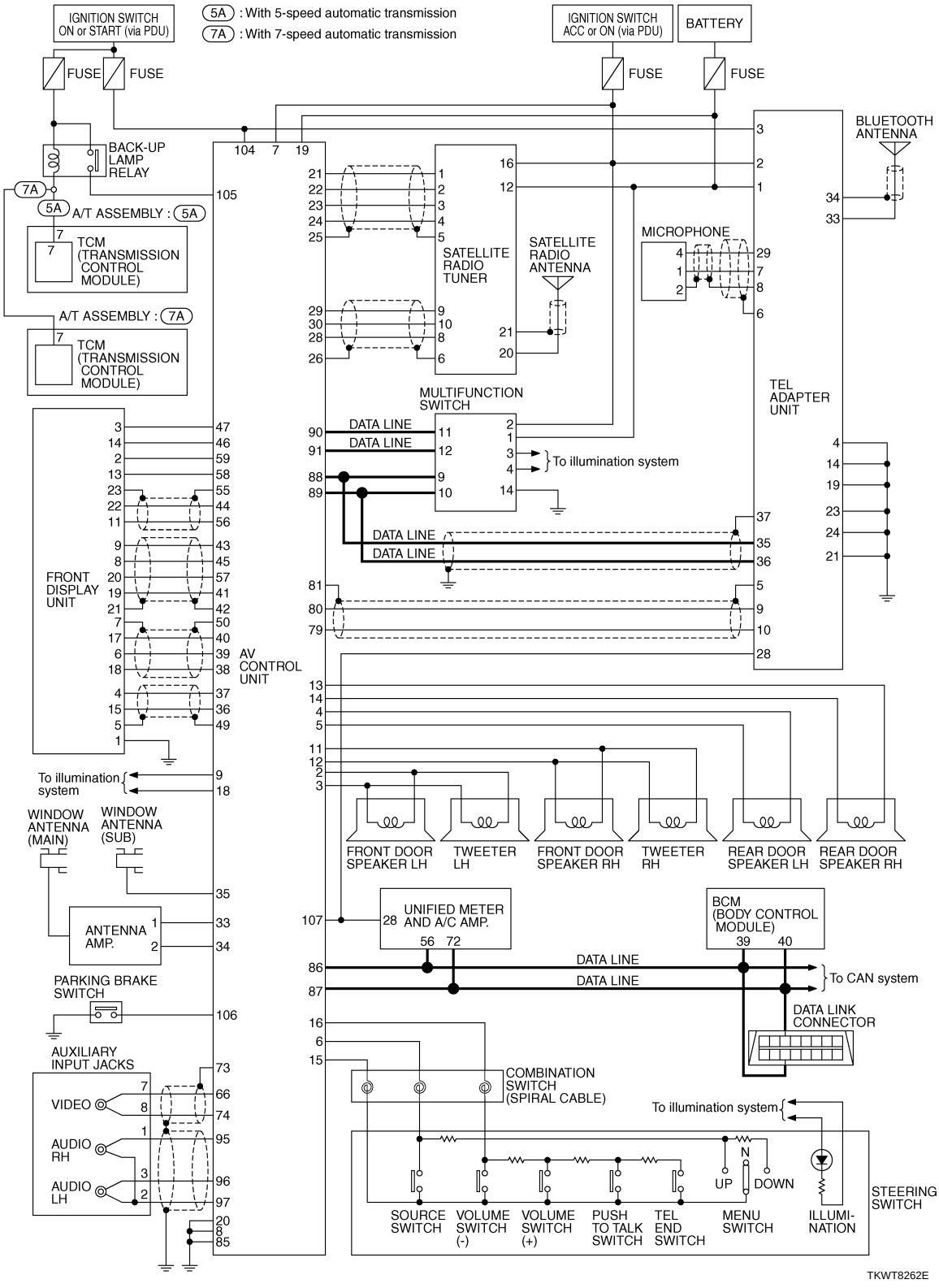
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Inverter VCC	Input	Ignition switch ACC	—	9 V
3 (L)	Ground	Signal VCC	Input	Ignition switch ACC	—	9 V
4 (G)	Ground	AUX image ground	—	Ignition switch ON	—	0 V
5	—	Shield	—	—	—	—
6 (L)	Ground	RGB image signal (G: green)	Input	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 SKIB2236J
7	—	Shield	—	—	—	—
8 (W)	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON	—	 SKIB3601E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
9 (G)	Ground	RGB area (YS) signal	Input	Ignition switch ON	When RGB image is displayed.	5 V
					When AUX image is displayed.	 PKIB4948J
11 (O/L)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
13 (W/R)	Ground	Inverter ground	—	Ignition switch ON	—	0 V
14 (O)	Ground	Signal ground	—	Ignition switch ON	—	0 V
15 (W)	4 (G)	AUX image signal	Input	Ignition switch ON	When AUX image is displayed.	 SKIB2251J
17 (G)	Ground	RGB image signal (R: red)	Input	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 SKIB2238J
18 (Y)	Ground	RGB image signal (B: blue)	Input	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 SKIB2237J

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
19 (B)	Ground	RGB synchronizing signal	Input	Ignition switch ON	—	 SKIB3603E
20 (R)	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch ON	—	 SKIB3598E
21	—	Shield	—	—	—	—
22 (W/L)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
23	—	Shield	—	—	—	—

WITHOUT NAVIGATION : Schematic - Base Audio System -

INFOID:0000000004380450



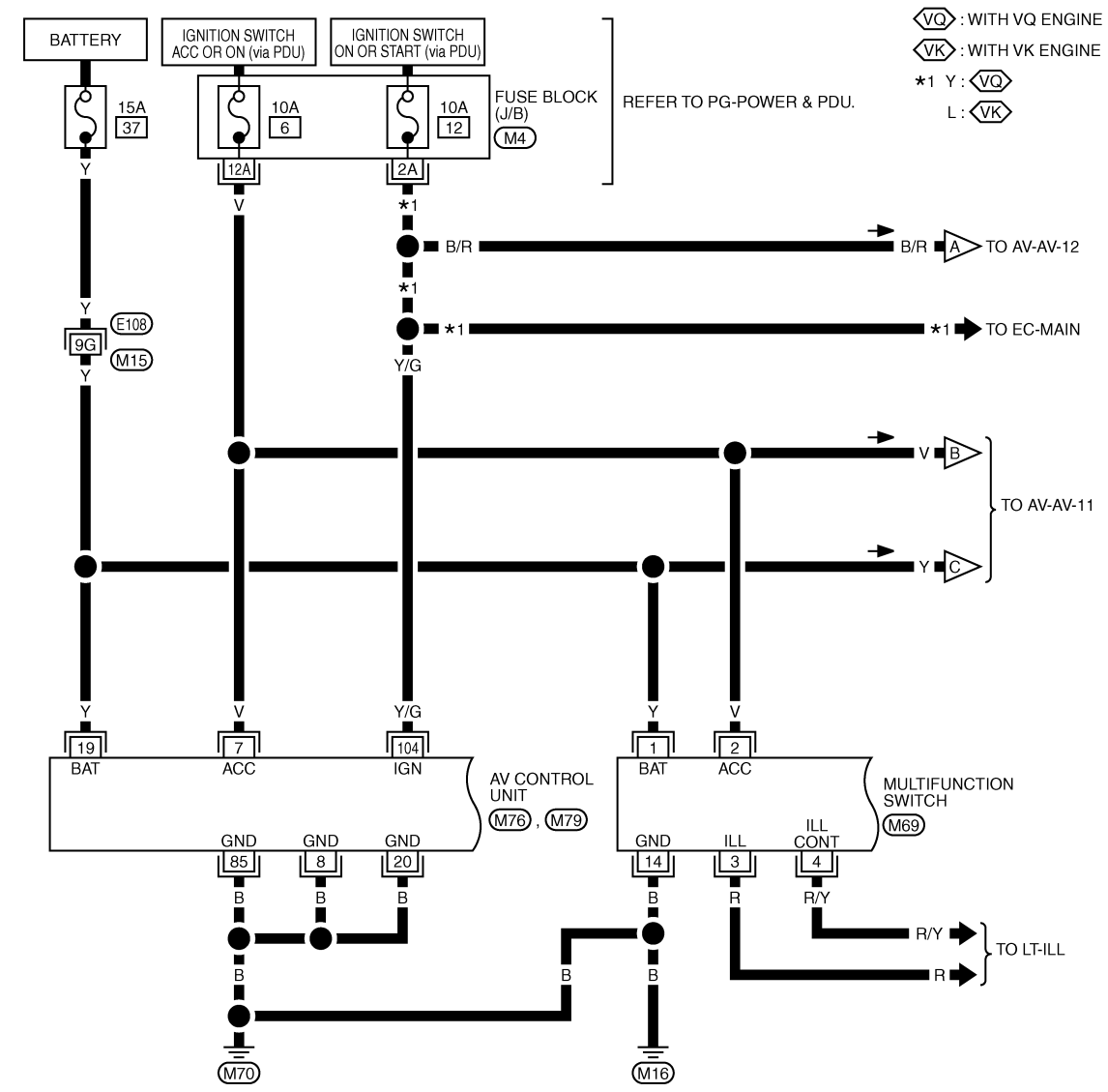
WITHOUT NAVIGATION : Wiring Diagram - AV - / Base Audio System

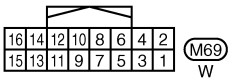
INFOID:0000000004380451

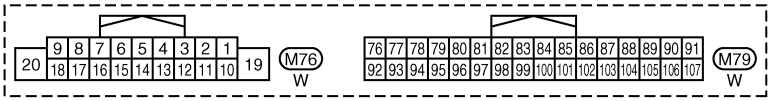
NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

AV-AV-01



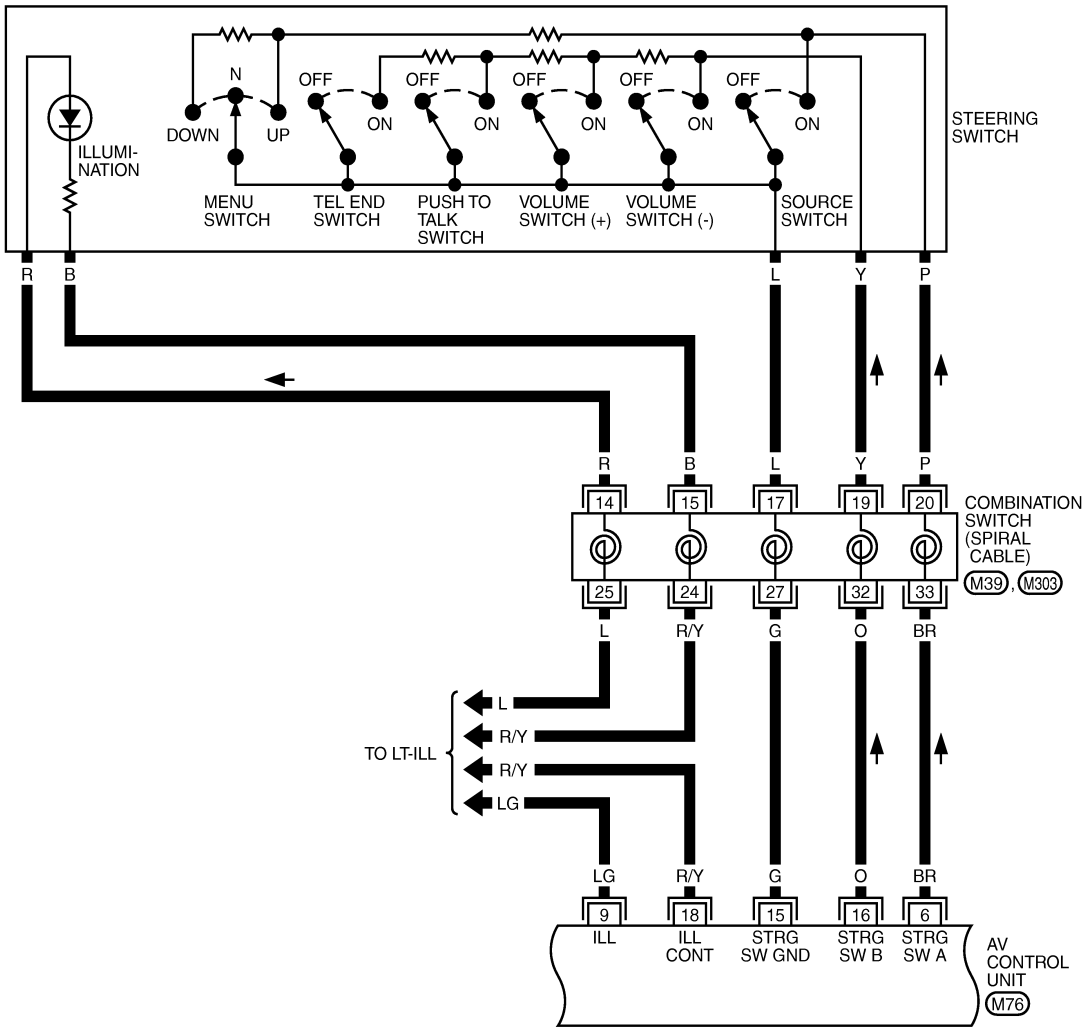


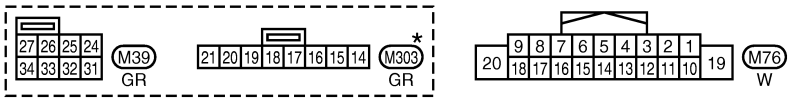


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8263E

AV-AV-02

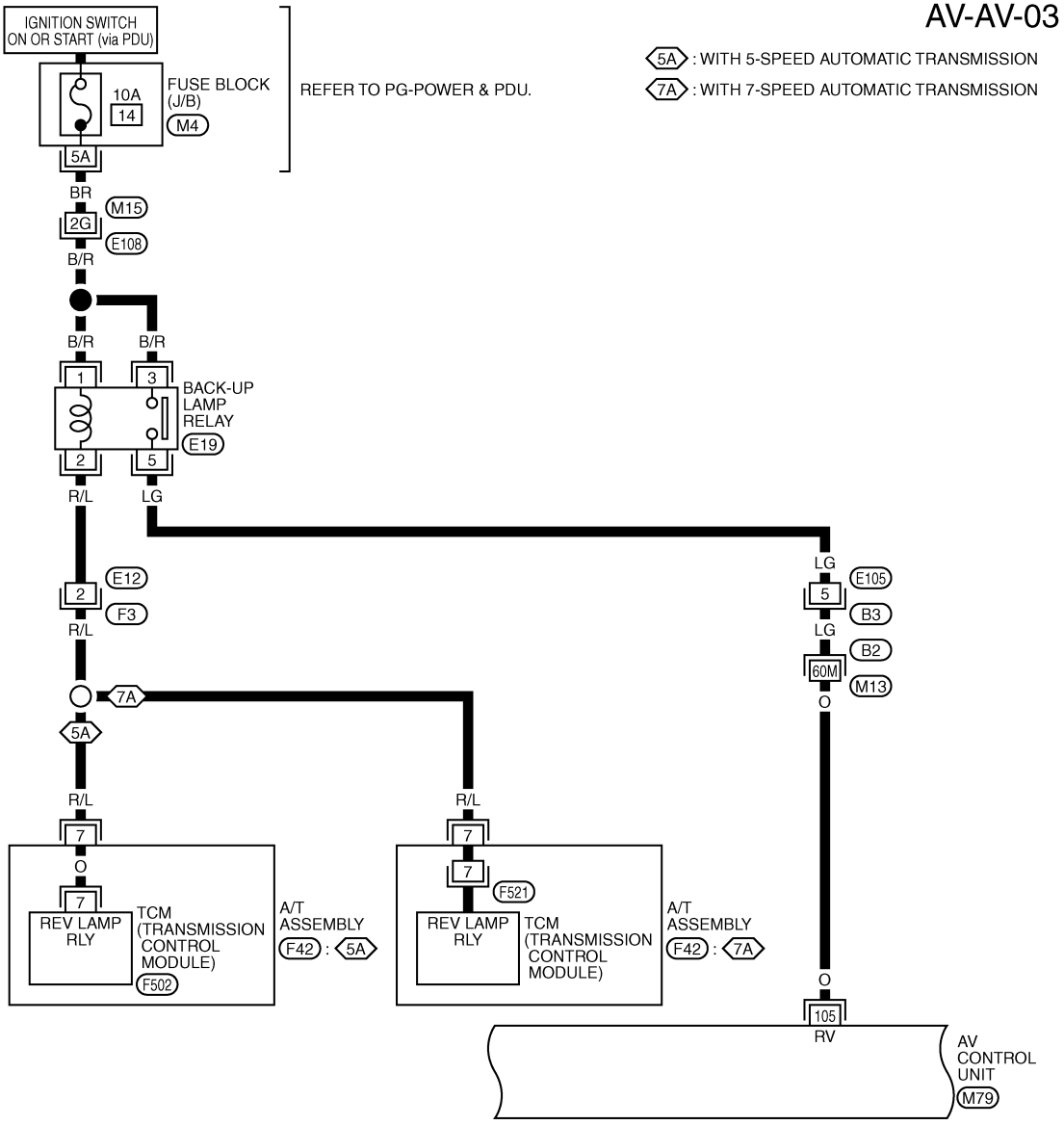


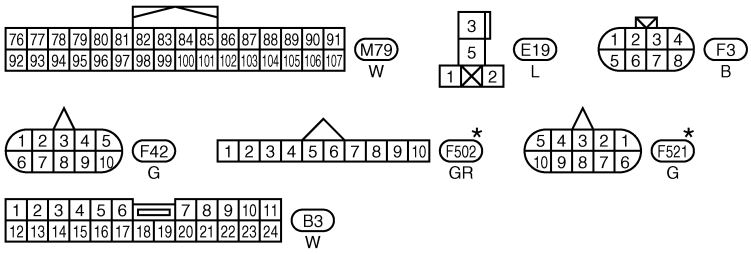


* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6674E

AV-AV-03



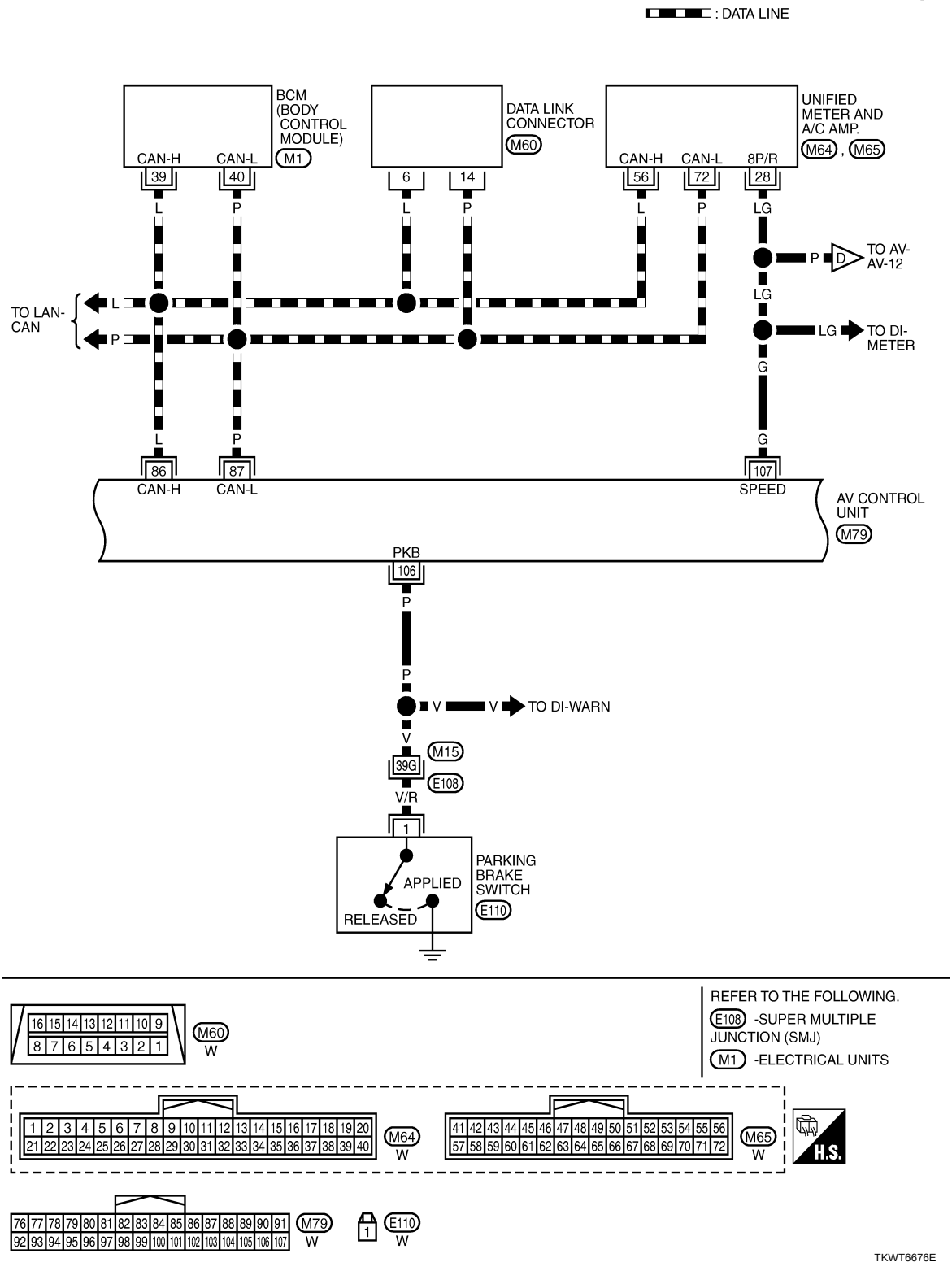


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

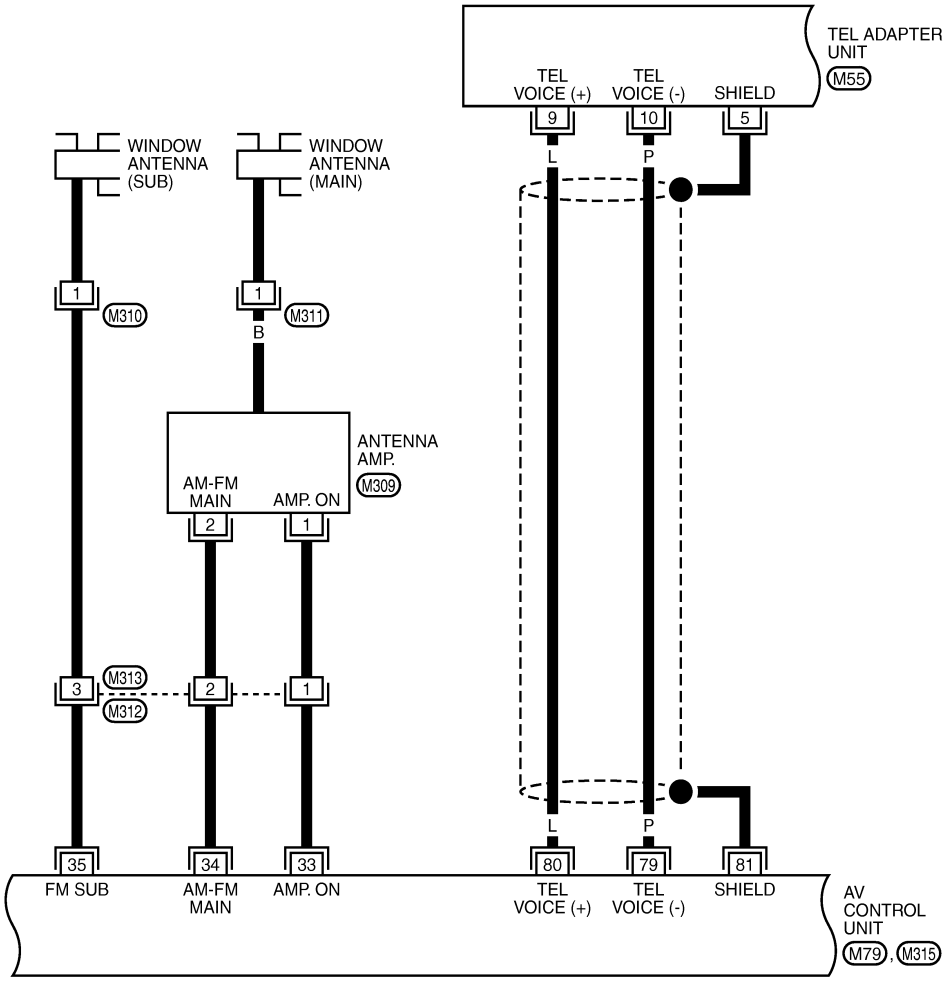
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

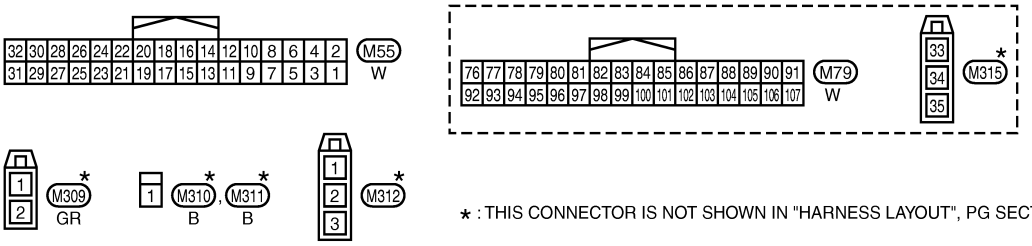
TKWT8264E

AV-AV-04


: DATA LINE
BCM (BODY CONTROL MODULE)
M1
CAN-H
CAN-L
39
40
DATA LINK CONNECTOR
M60
6
14
UNIFIED METER AND A/C AMP.
M64, M65
CAN-H
CAN-L
8P/R
56
72
28
L
P
LG
TO AV-AV-12
TO LAN-CAN
TO DI-METER
G
86
87
107
CAN-H
CAN-L
SPEED
AV CONTROL UNIT
M79
PKB
106
V
TO DI-WARN
M15
39G
E108
V/R
1
PARKING BRAKE SWITCH
E110
APPLIED
RELEASED
M60
W
REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M1 -ELECTRICAL UNITS
M64
M65
H.S.
M79
E110
TKWT6676E

AV-AV-05

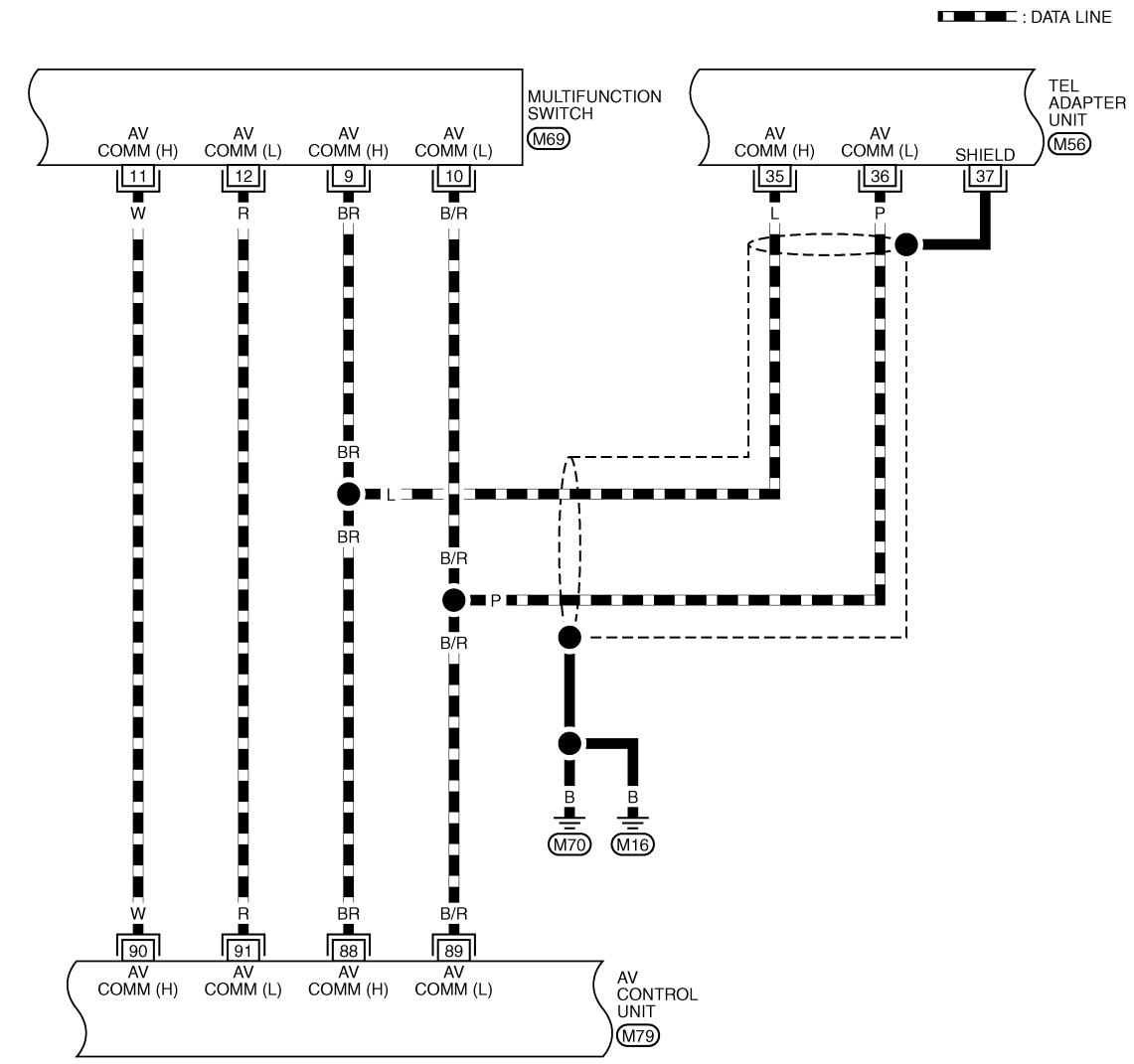


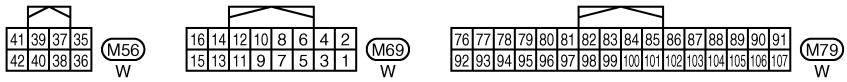


* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6677E

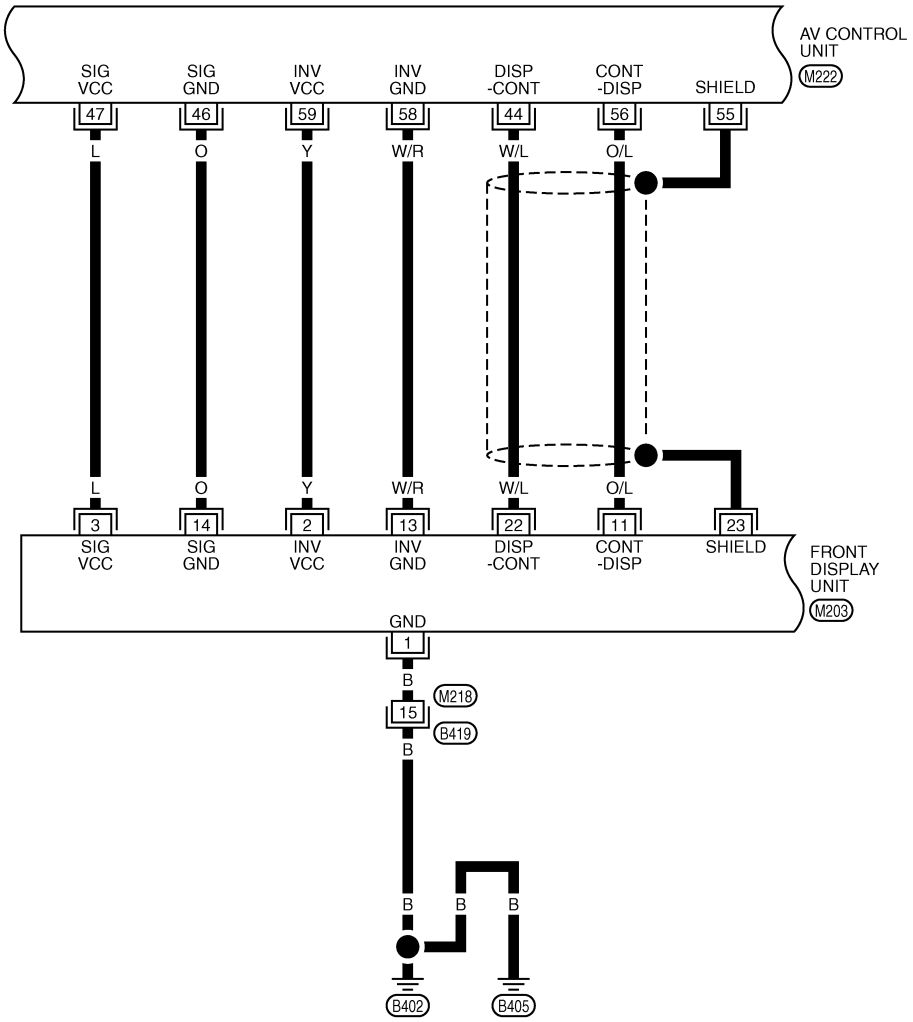
AV-AV-06

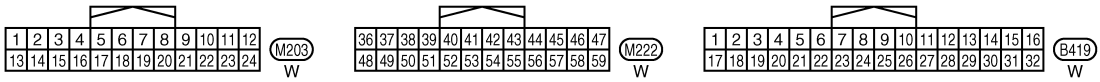




TKWT8265E

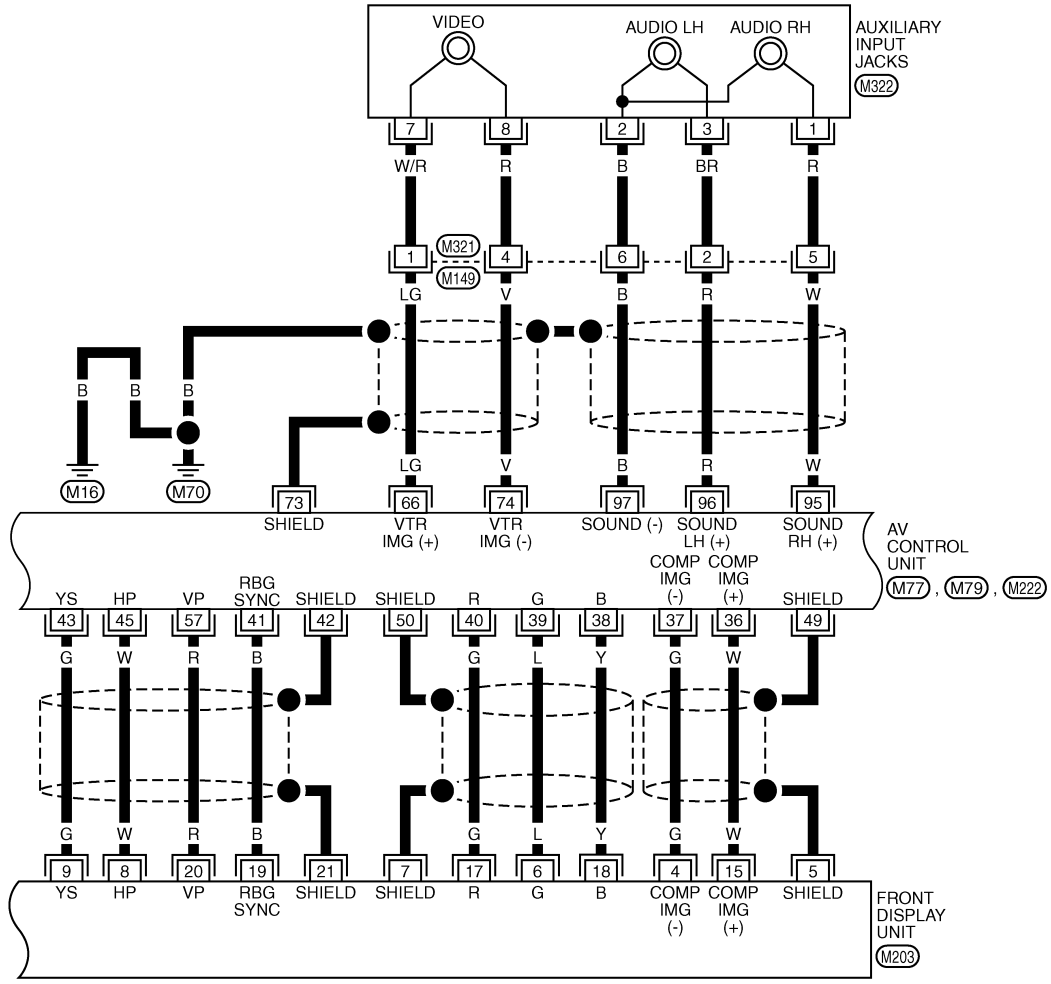
AV-AV-07

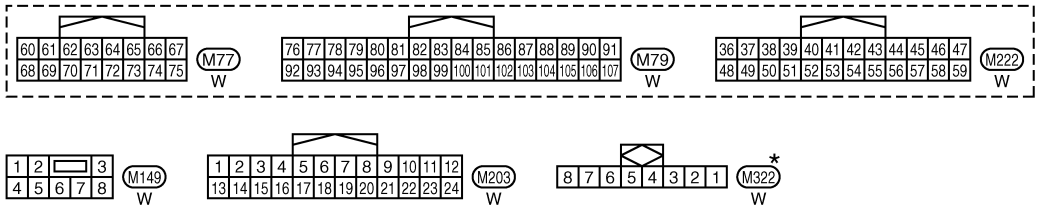




TKWT8266E

AV-AV-08

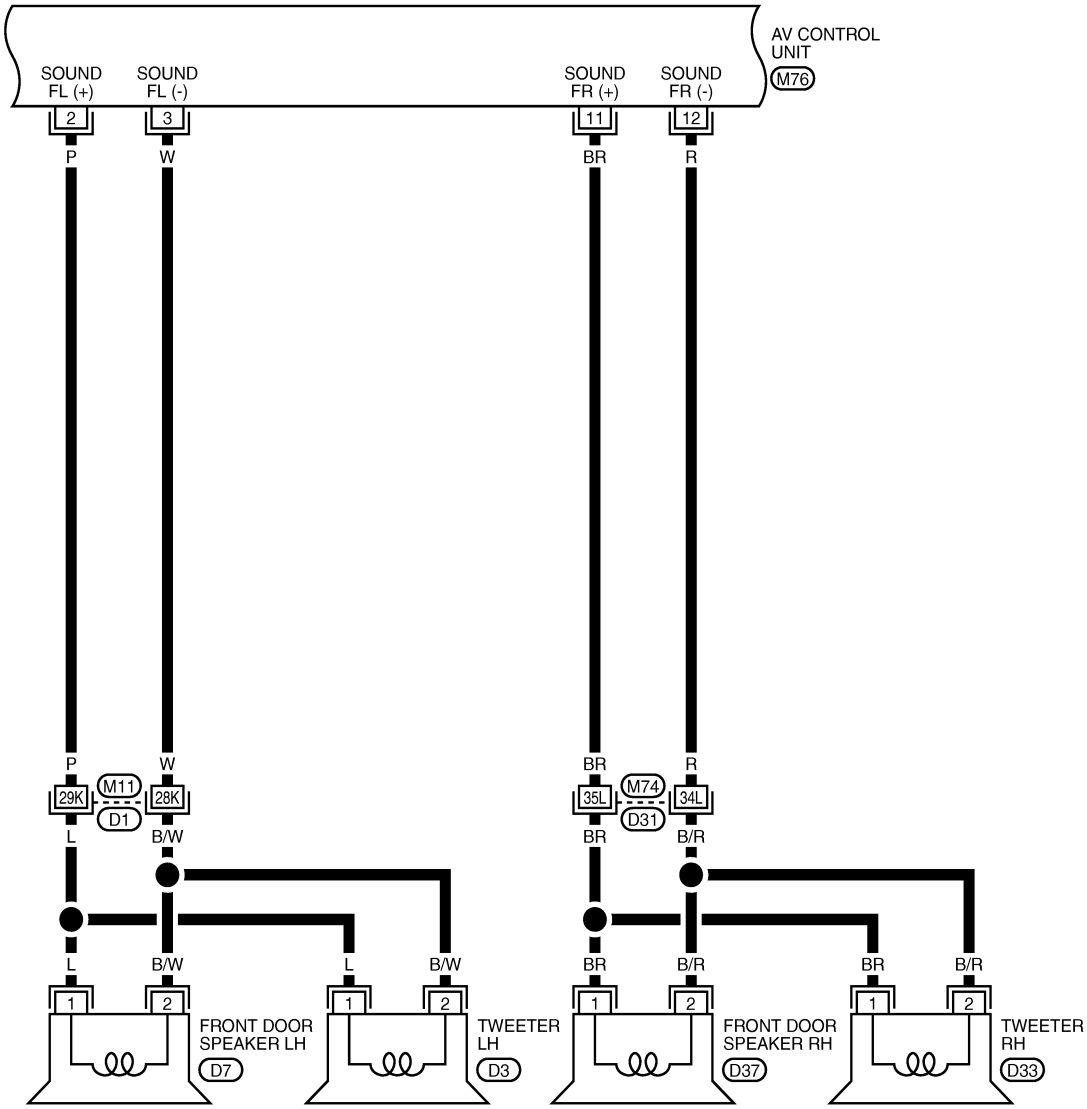


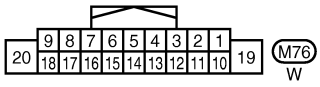


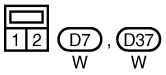
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8267E

AV-AV-09



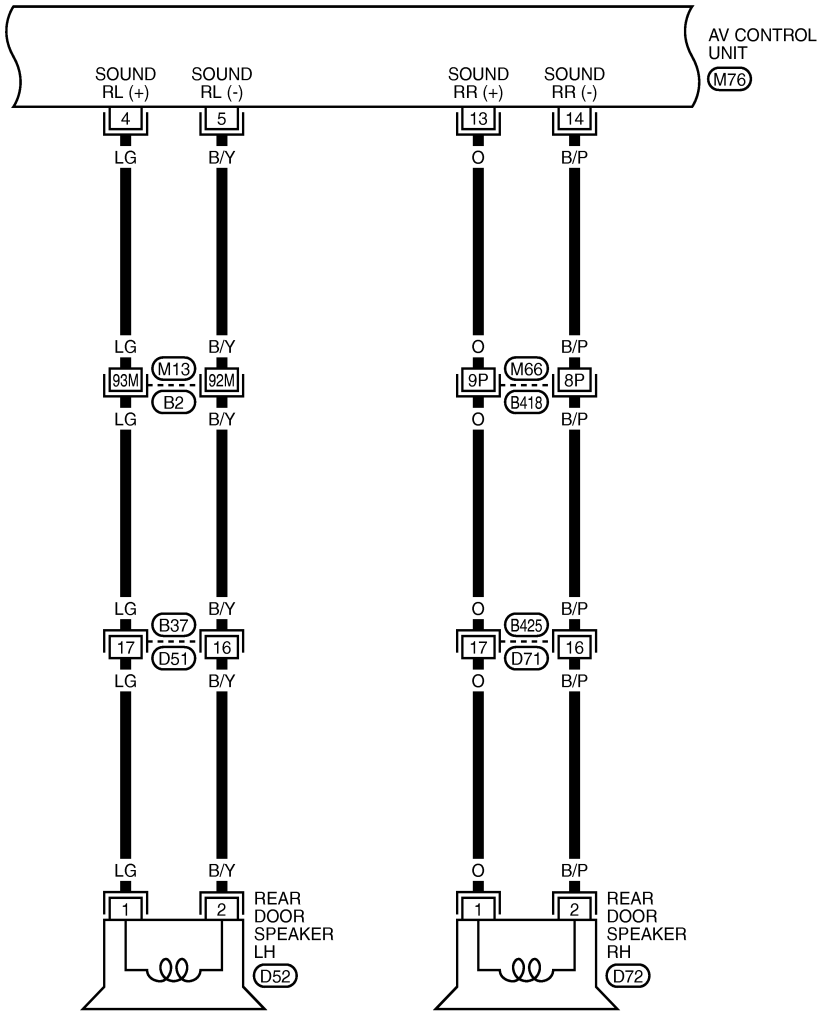


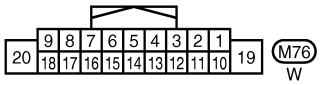


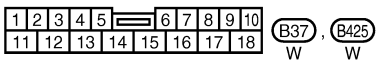
REFER TO THE FOLLOWING.
D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

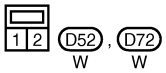
TKWT6681E

AV-AV-10





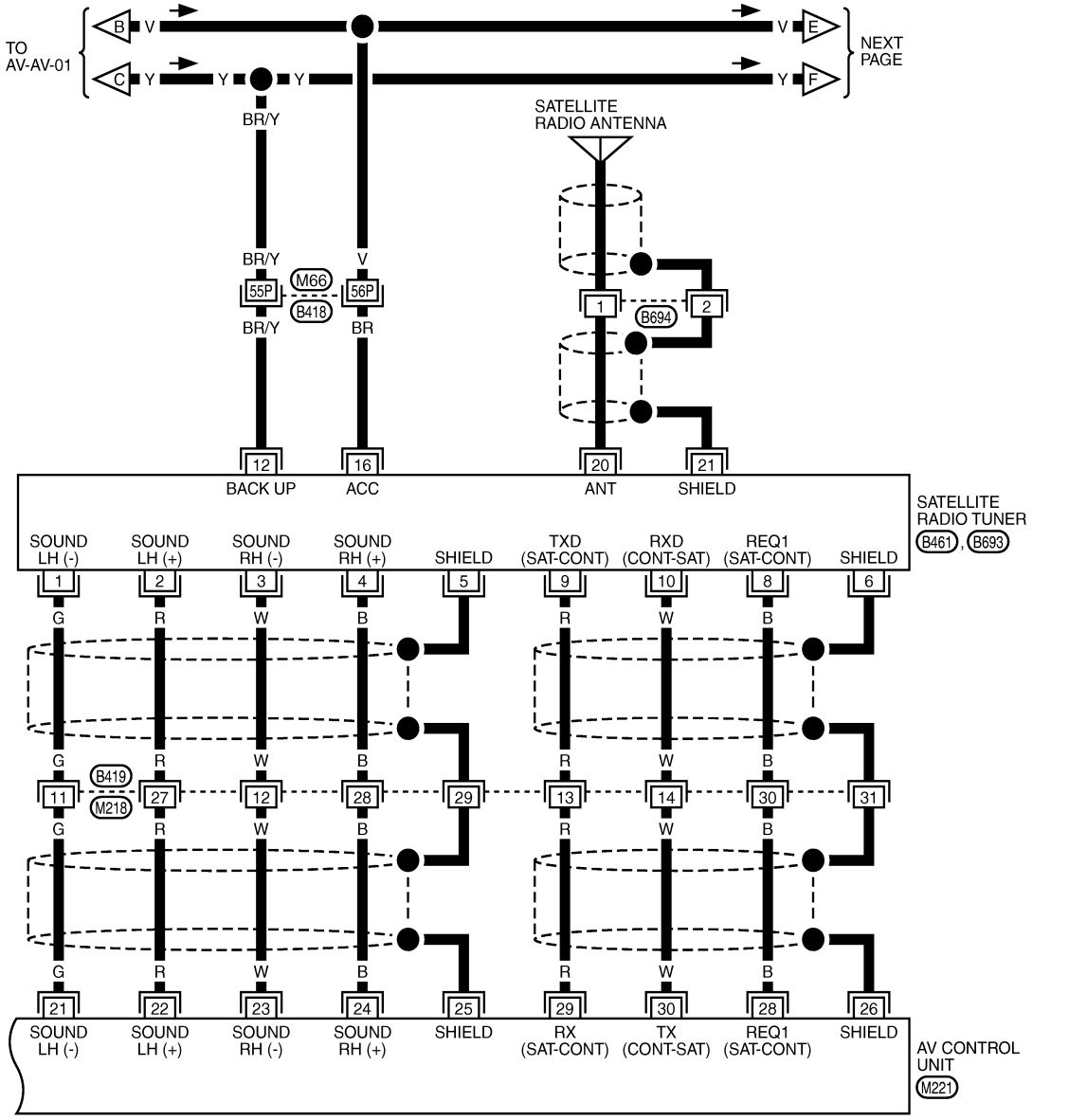


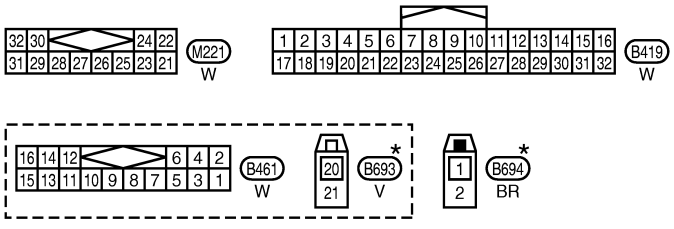


REFER TO THE FOLLOWING.
B2 , B418 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT6682E

AV-AV-11



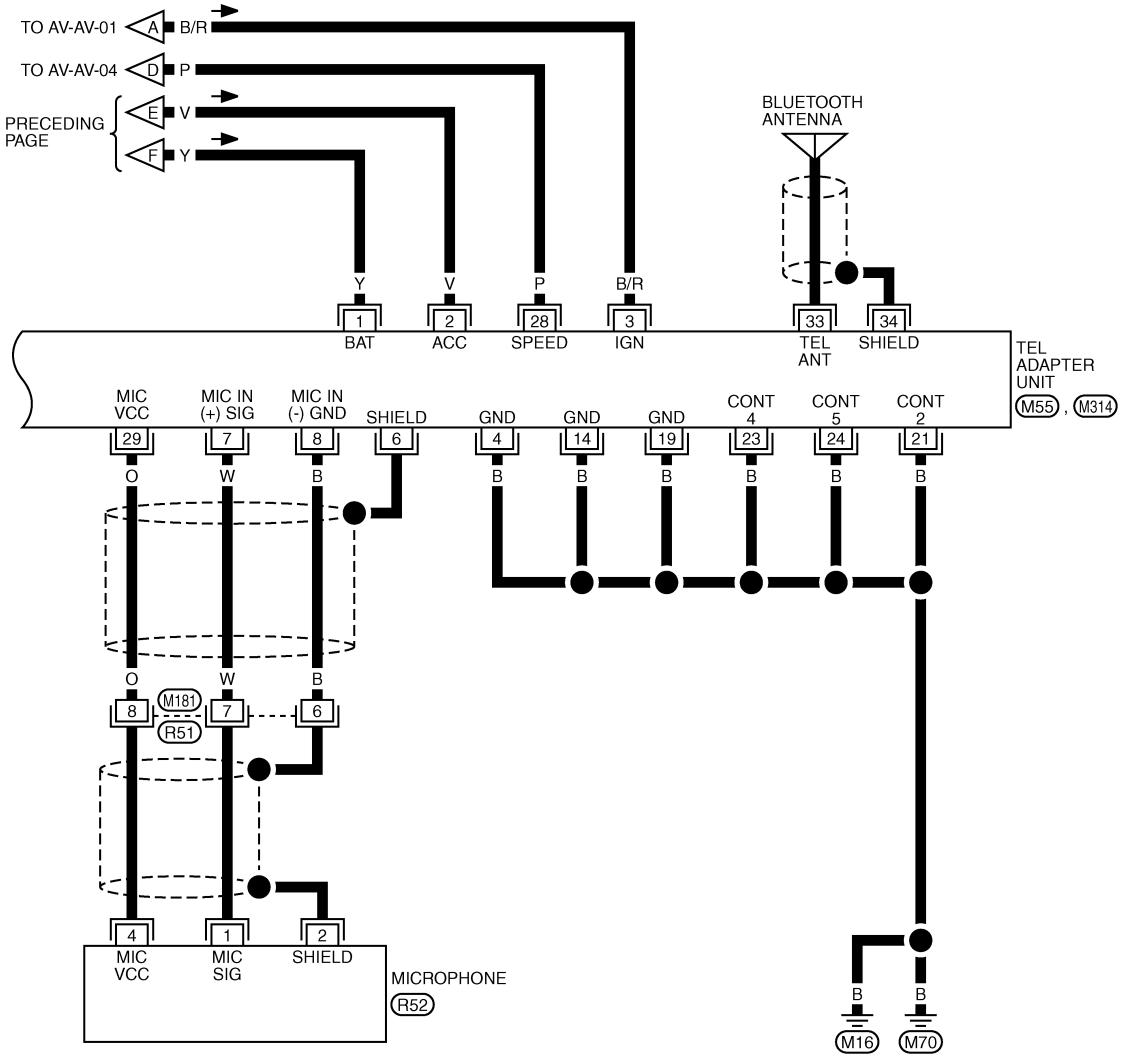


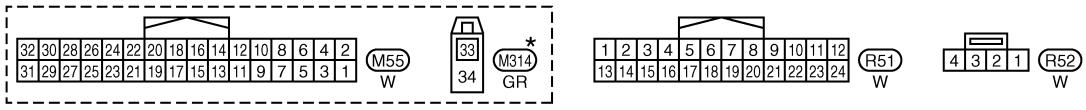
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6683E

AV-AV-12





∗: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

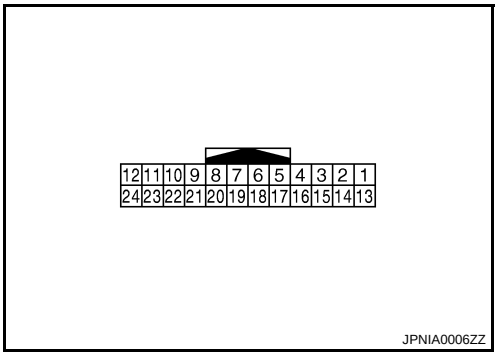
TKWT8268E

WITH NAVIGATION

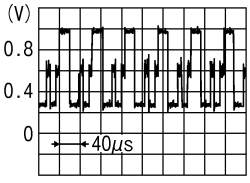
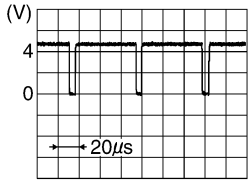
WITH NAVIGATION : Reference Value

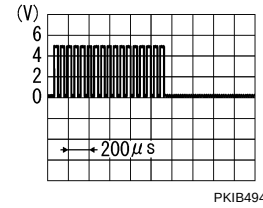
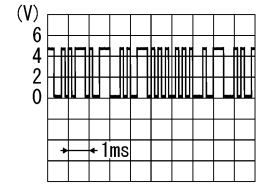
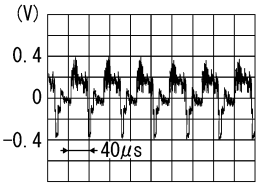
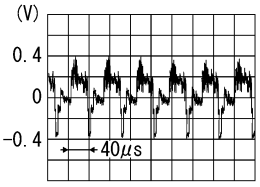
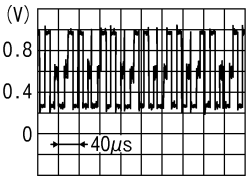
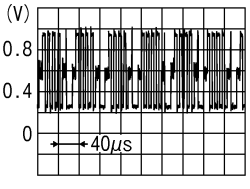
INFOID:0000000004155807

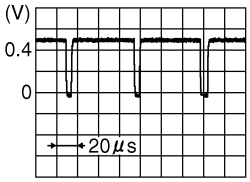
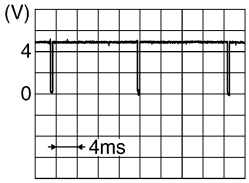
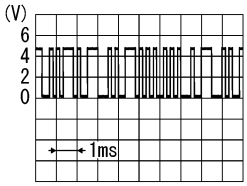
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
3 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
5 (BR)	Ground	Composite image ground (AUX image)*1 (DVD and AUX images)*2	—	Ignition switch ON	—	0 V
6 (G/R)	Ground	RGB image signal (G: green)	Input	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1030ZZ
7 (P)	Ground	RGB image signal ground	—	Ignition switch ON	—	0 V
8 (W)	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON	—	 SKIB3601E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
9 (G)	Ground	RGB area (YS) signal	Input	Ignition switch ON	When RGB image is displayed.	5 V
					When rear view camera image is displayed.	 PKIB4948J
11 (O/L)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting front display brightness.	 PKIB5039J
12 (W)	Ground	Camera image signal	Input	Ignition switch ON	When rear view camera image is displayed.	 SKIB2251J
13 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
14	—	Shield	—	—	—	—
15 (B/R)	5 (BR)	Composite image signal (AUX image signal)*1 (AUX and DVD image)*2	Input	Ignition switch ON	When AUX or DVD image is displayed.	 SKIB2251J
17 (G/O)	Ground	RGB image signal (R: red)	Input	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1029ZZ
18 (G/Y)	Ground	RGB image signal (B: blue)	Input	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1031ZZ

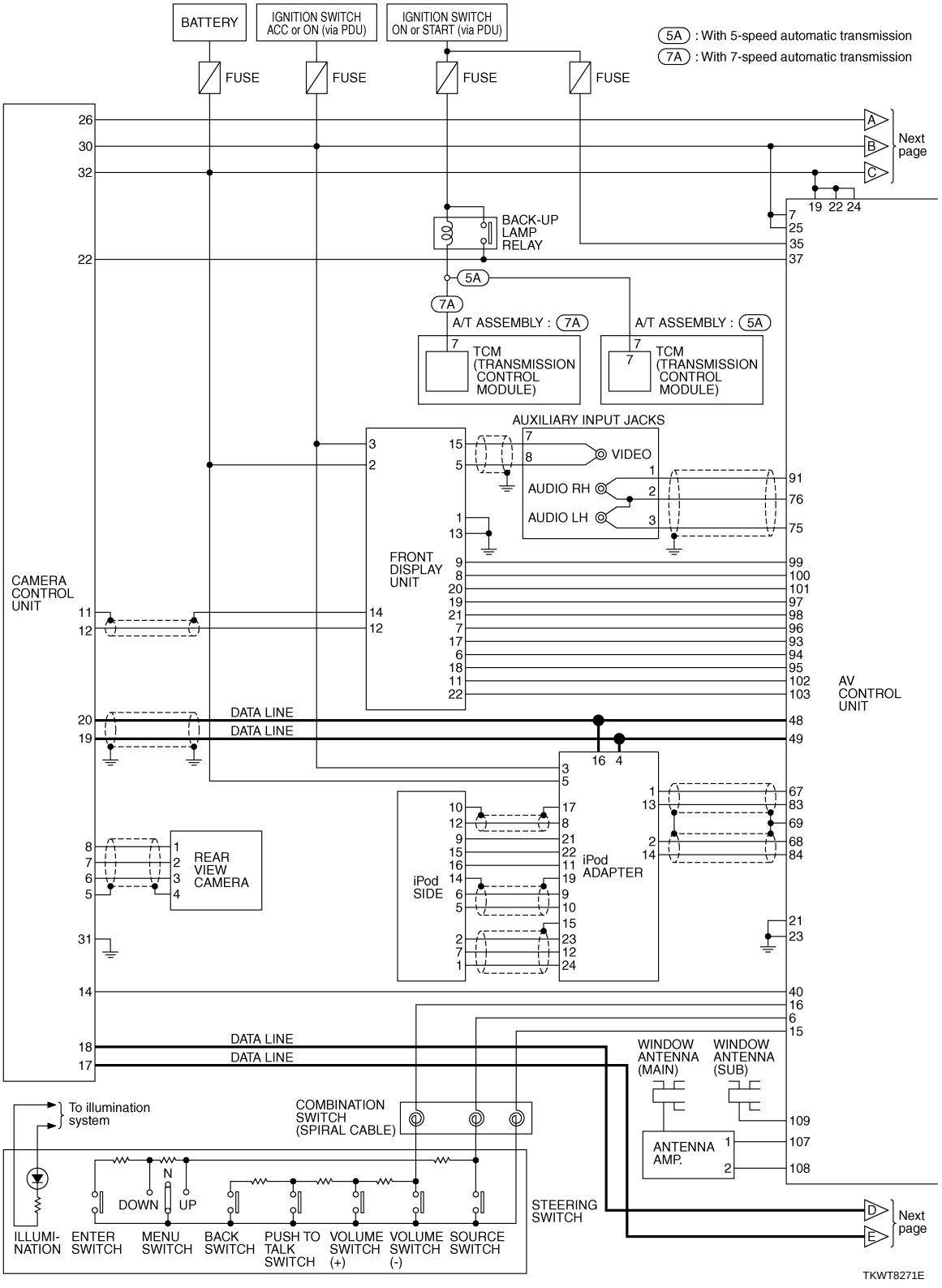
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
19 (L)	Ground	RGB synchronizing signal	Input	Ignition switch ON	—	 JPNIA0461GB
20 (R)	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch ON	—	 SKIB3598E
21 (B)	Ground	RGB synchronizing signal ground	—	Ignition switch ON	—	0 V
22 (W/L)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting front display brightness.	 PKIB5039J

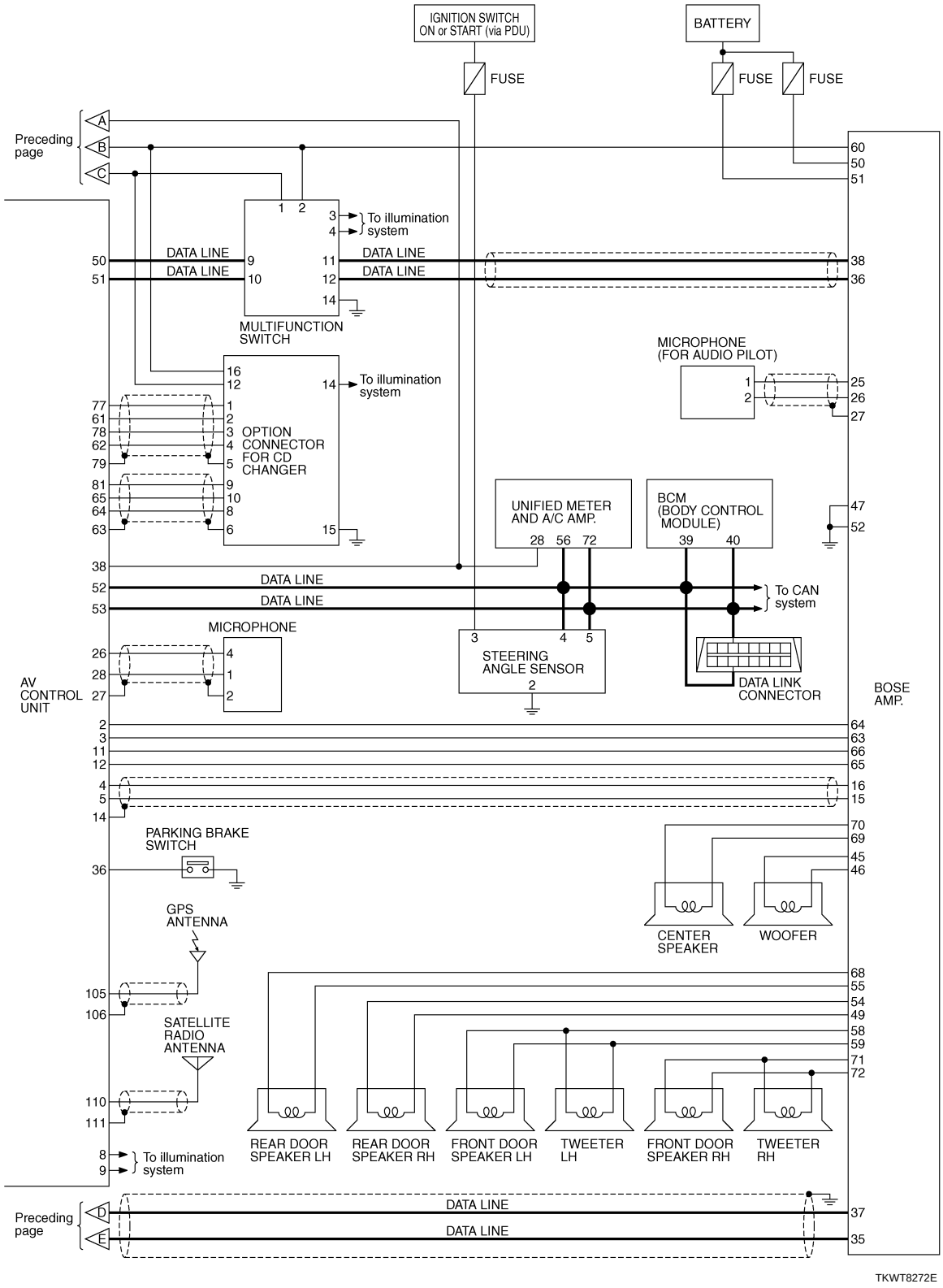
*1: Without DVD player models.

*2: With DVD player models.

WITH NAVIGATION : Schematic - BOSE Audio 2ch System -

INFOID:0000000004380452





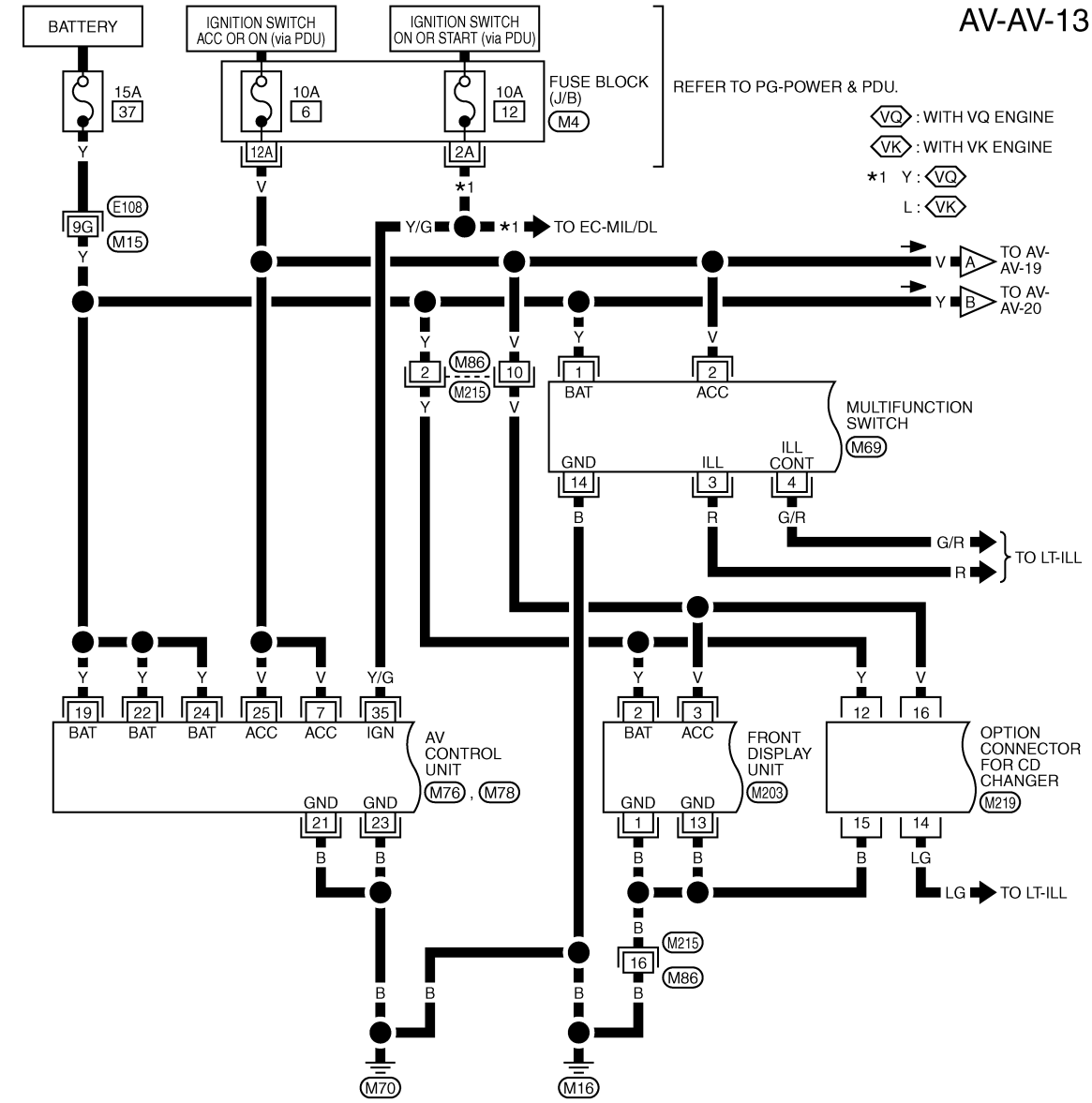
TKWT8272E

WITH NAVIGATION : Wiring Diagram - AV - / BOSE Audio 2ch System

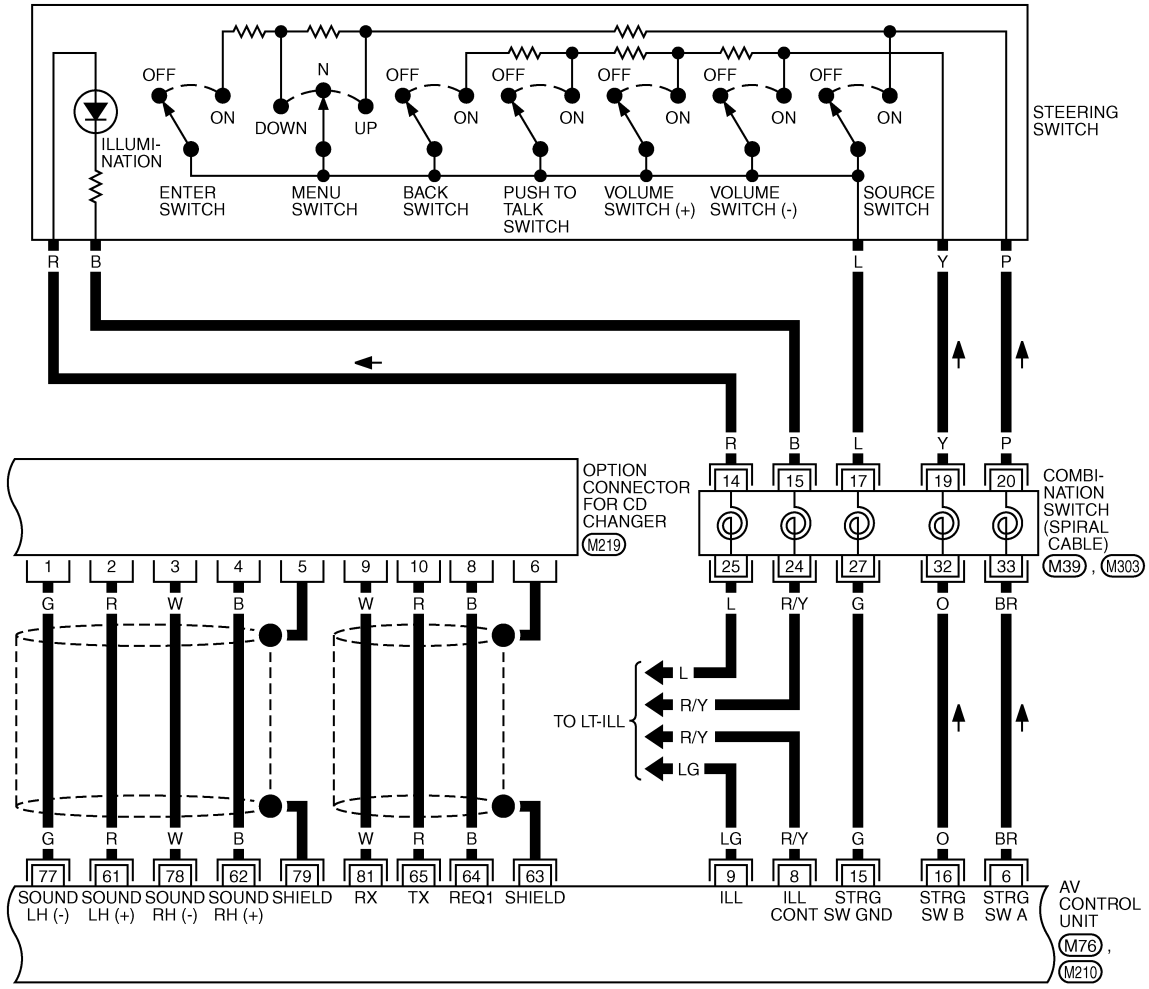
INFOID:0000000004380453

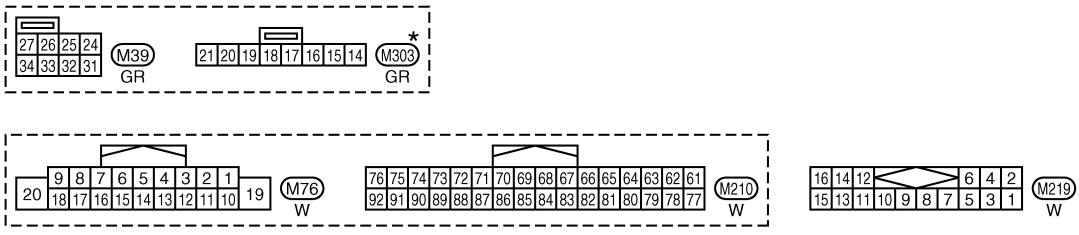
NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.



AV-AV-14

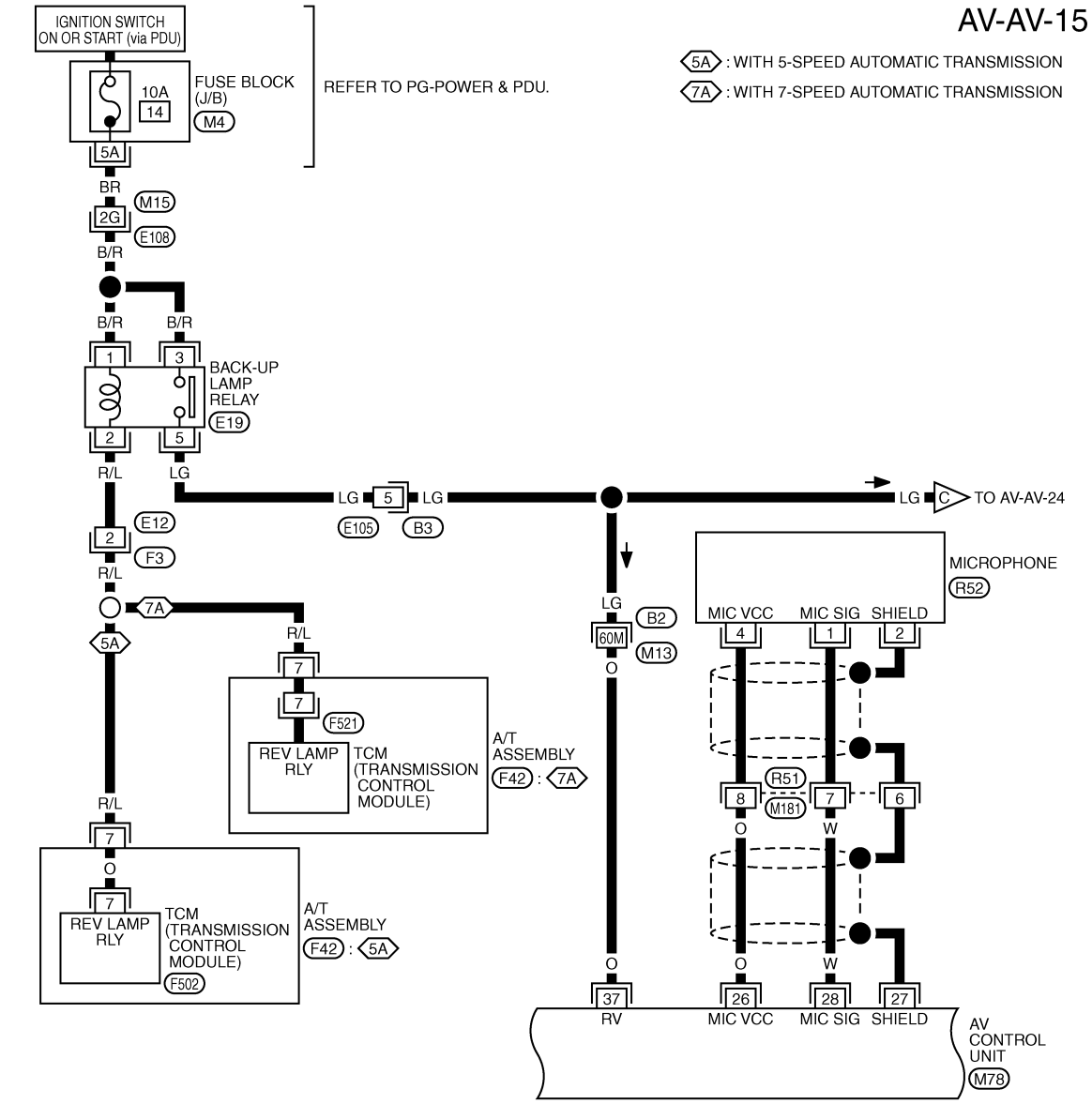


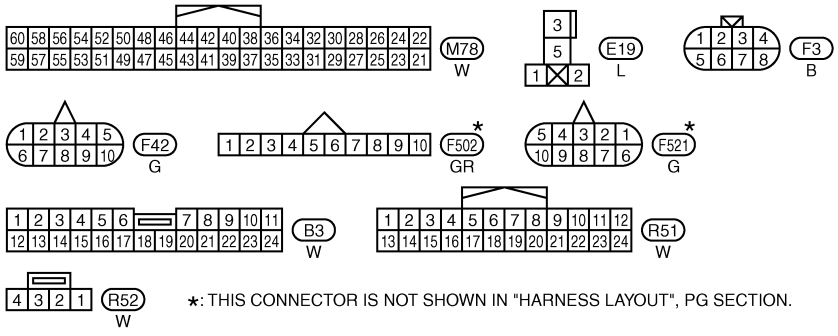


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8274E

AV-AV-15

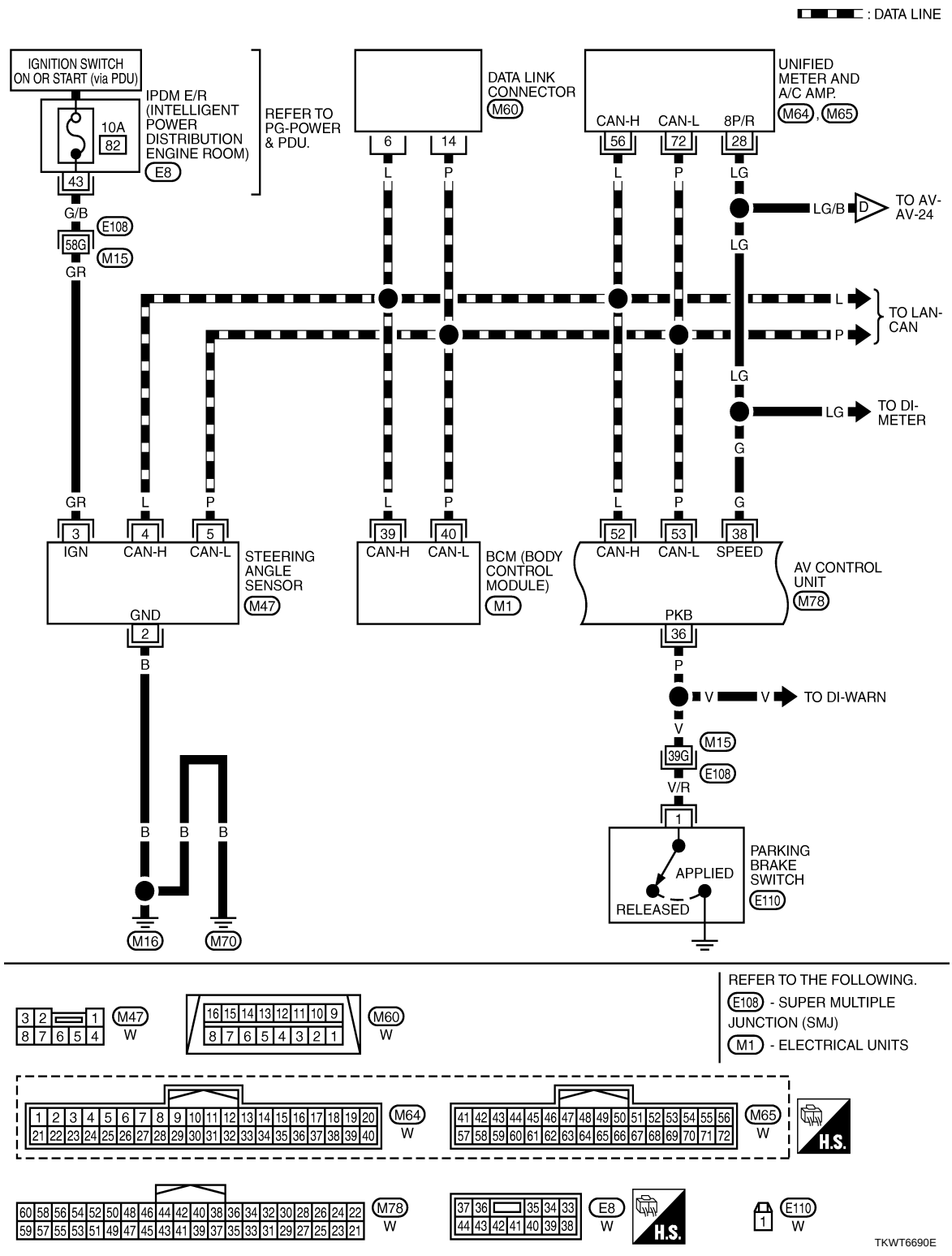




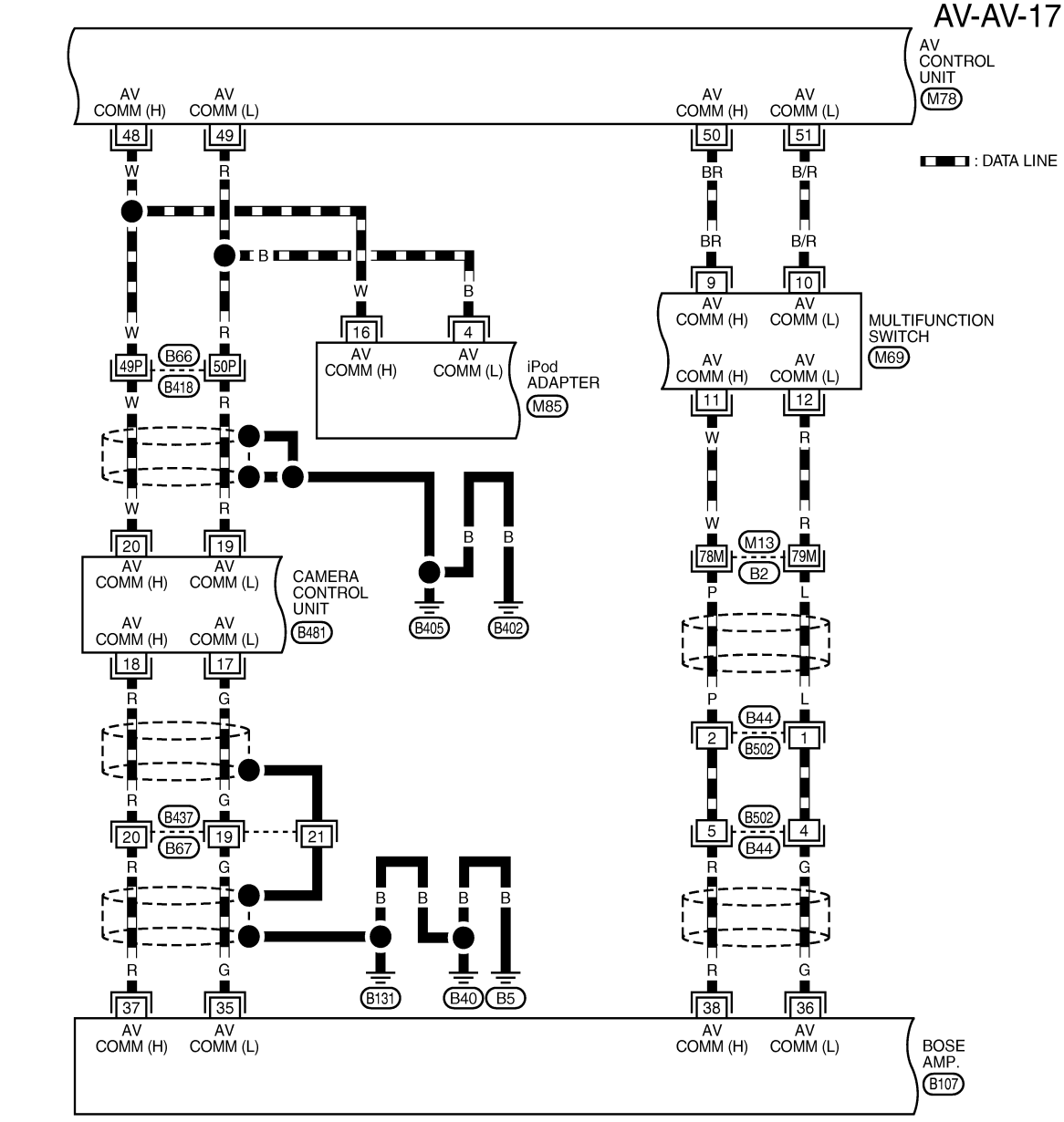
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

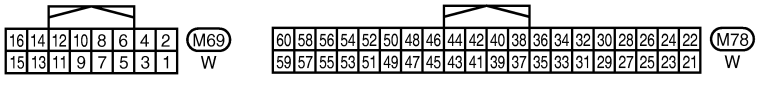
TKWT8275E

AV-AV-16

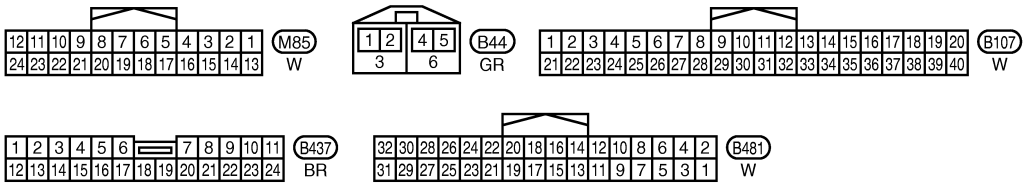

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
G/B
E108
58G
M15
GR
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
L
P
UNIFIED METER AND A/C AMP. M64, M65
CAN-H
CAN-L
8P/R
56
72
28
L
P
LG
LG/B
D
TO AV-AV-24
LG
L
P
TO LAN-CAN
LG
LG
TO DI-METER
G
GR
L
P
3
IGN
4
CAN-H
5
CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
39
CAN-H
40
CAN-L
BCM (BODY CONTROL MODULE) M1
52
CAN-H
53
CAN-L
38
SPEED
AV CONTROL UNIT M78
PKB
36
P
V
V
TO DI-WARN
V
39G
M15
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B
B
B
M16
M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47
W
M60
W
M64
W
M65
W
H.S.
M78
W
E8
W
H.S.
E110
W
TKWT6690E

AV-AV-17



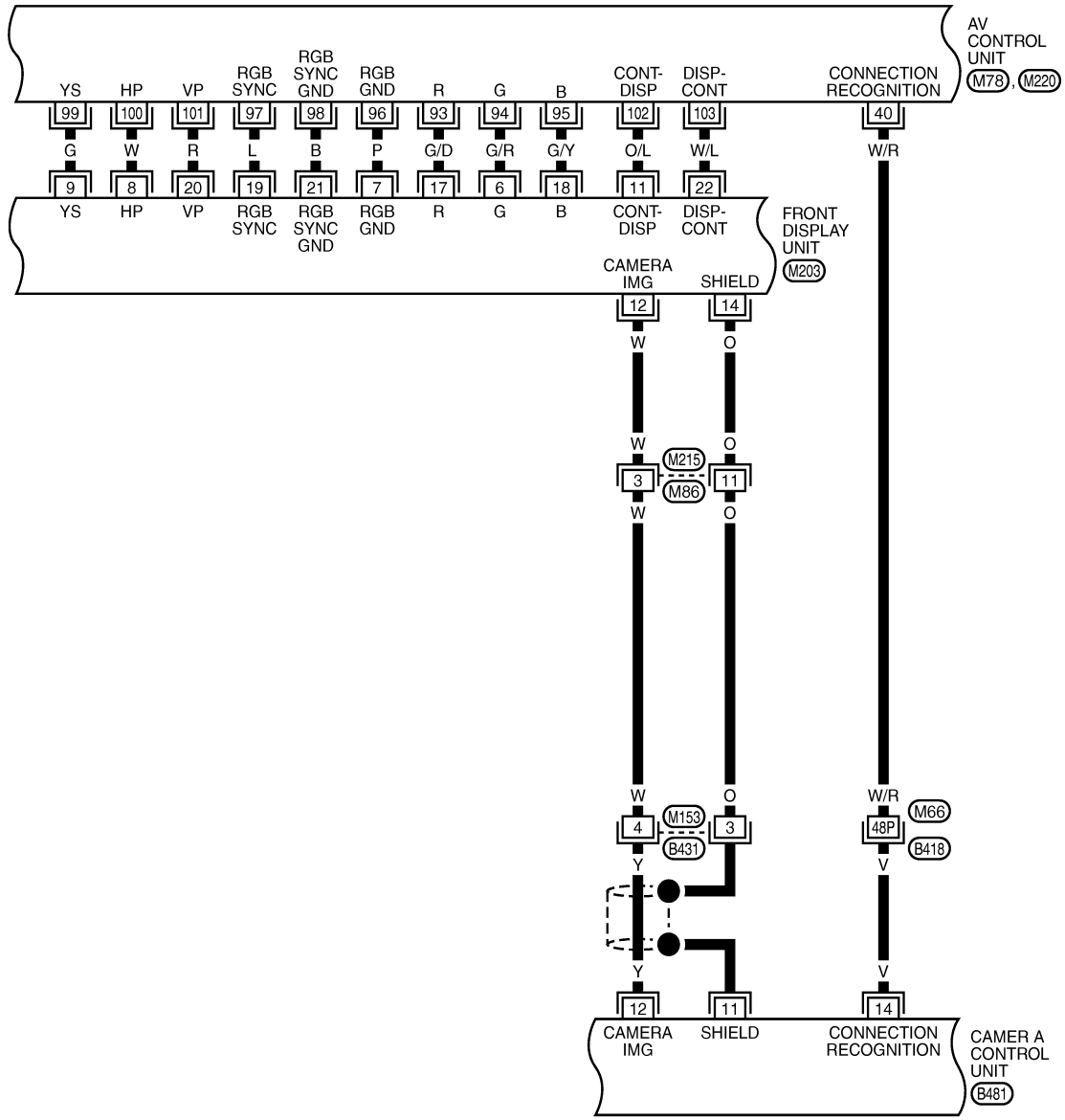


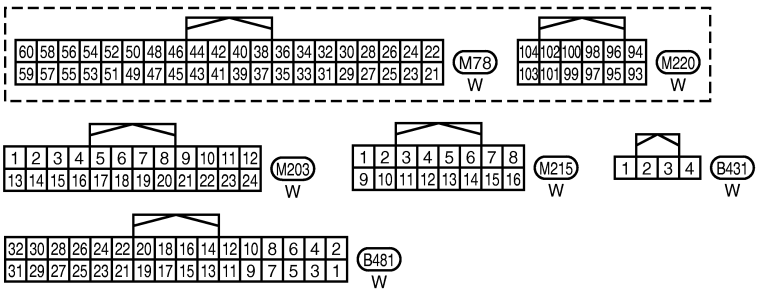
REFER TO THE FOLLOWING.
B2 , B418 - SUPER MULTIPLE JUNCTION (SMJ)



TKWT6691E

AV-AV-18

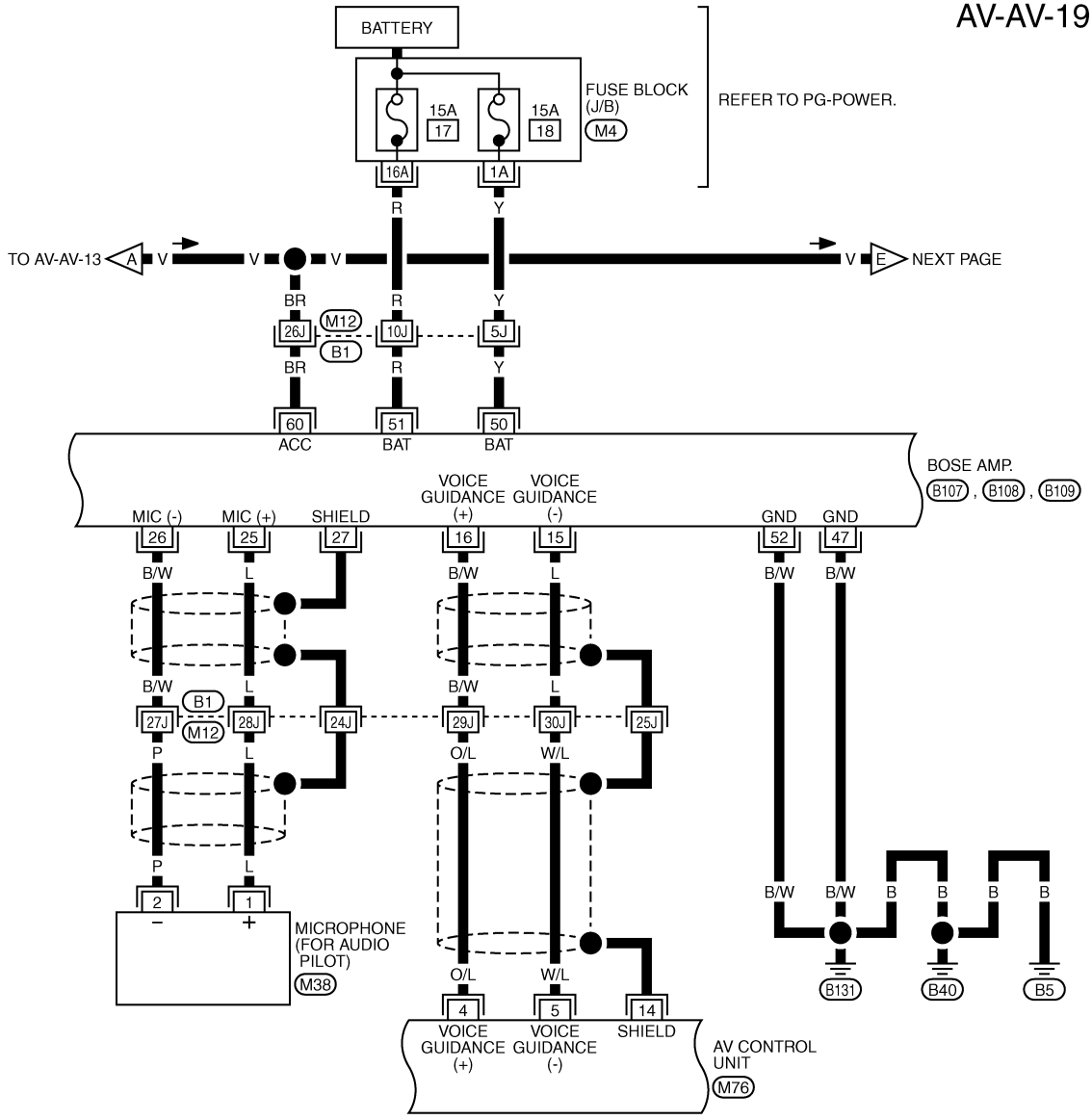


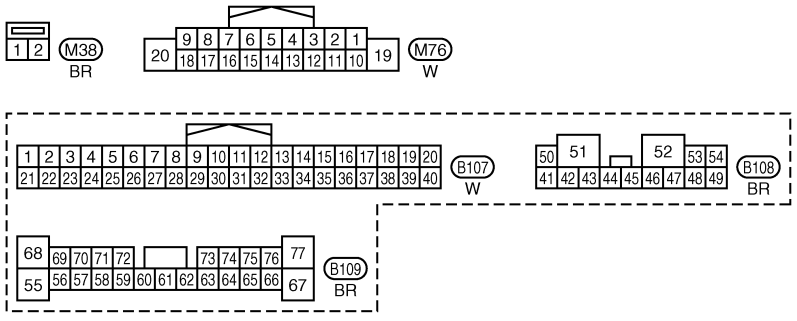


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6692E

AV-AV-19

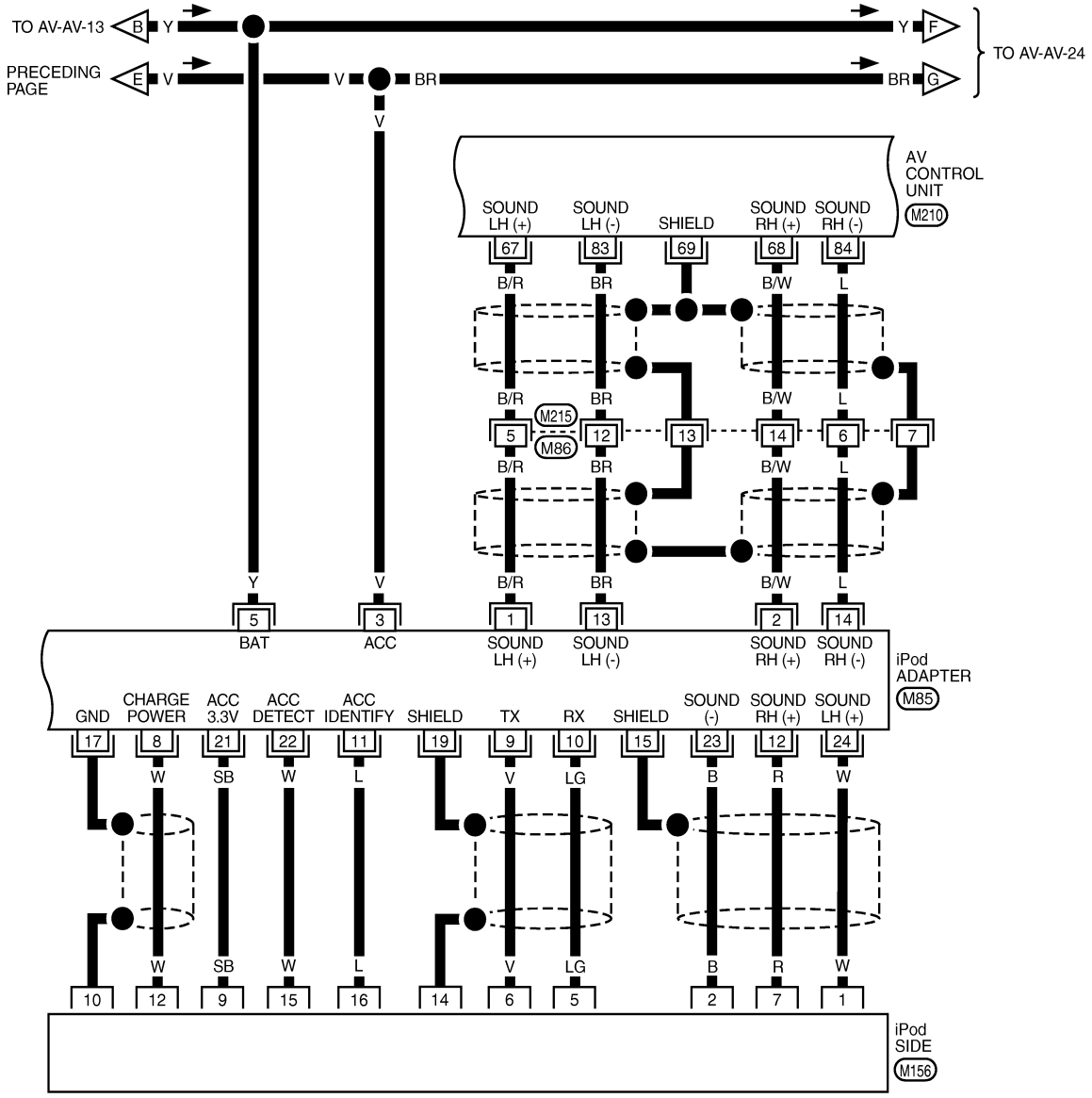


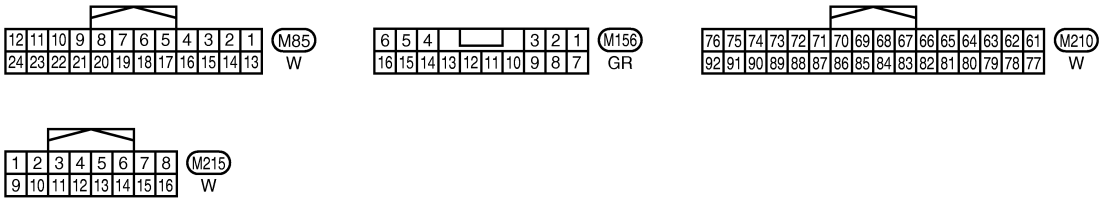


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8276E

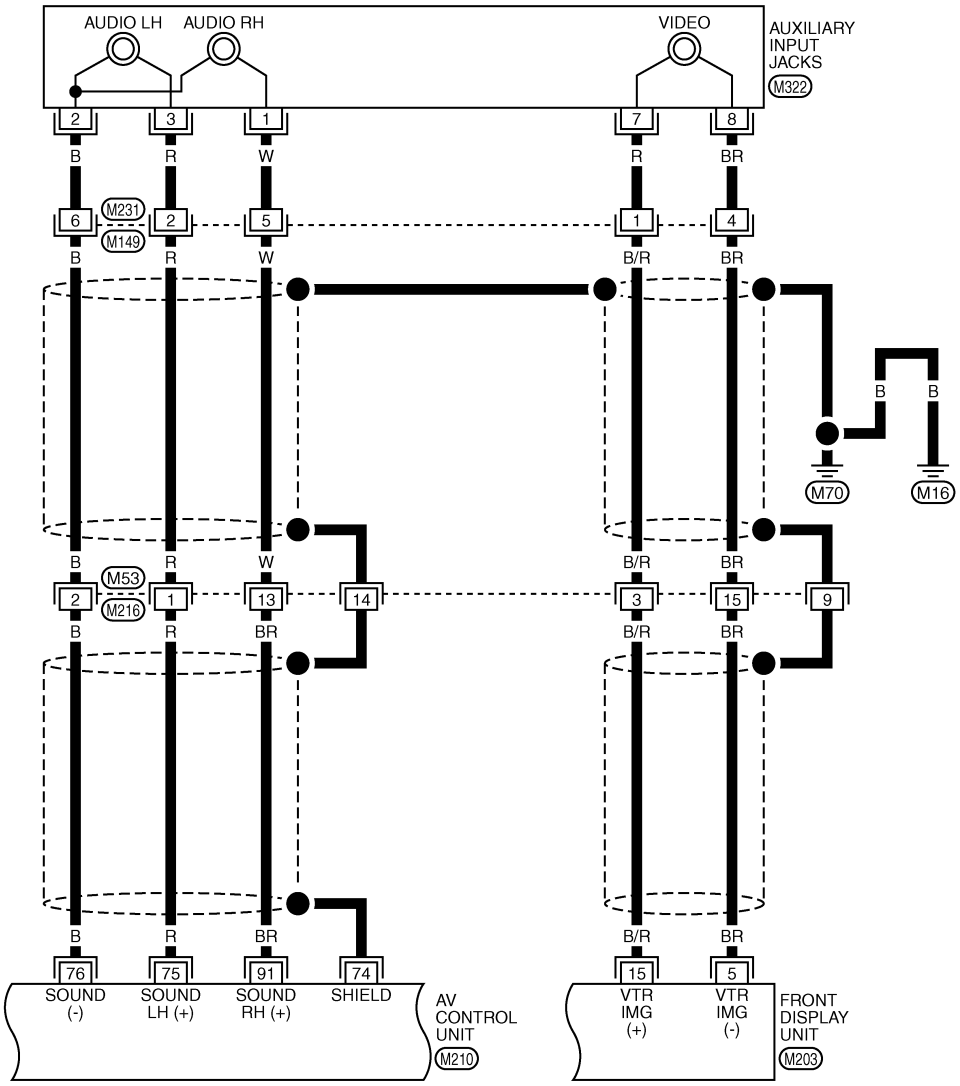
AV-AV-20

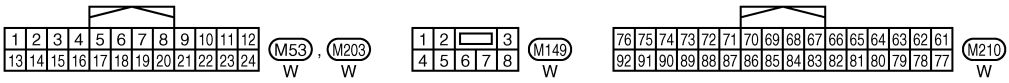


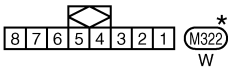


TKWT6695E

AV-AV-21



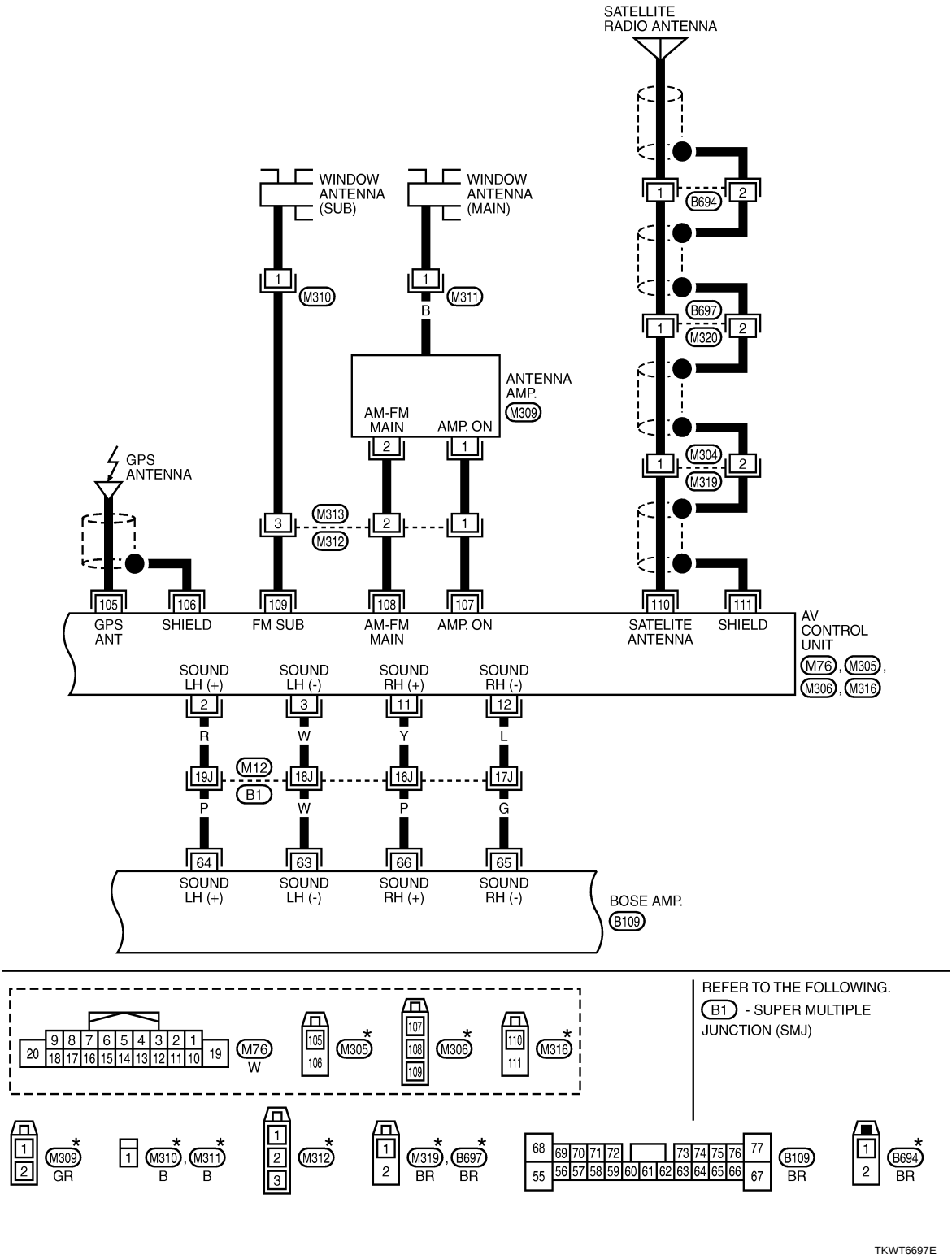




*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

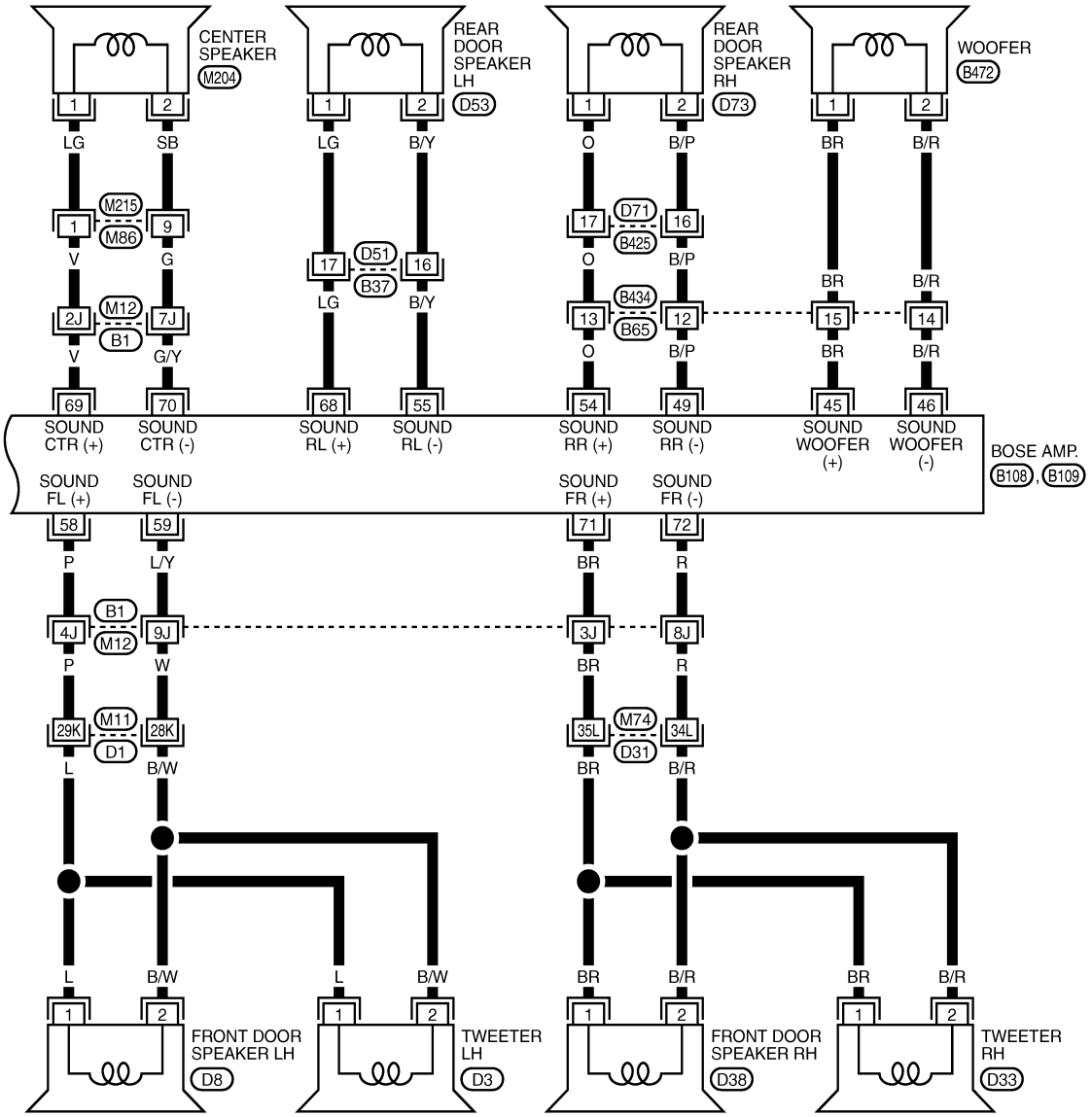
TKWT8277E

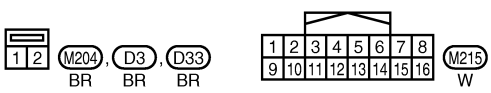
AV-AV-22



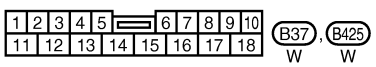
TKWT6697E

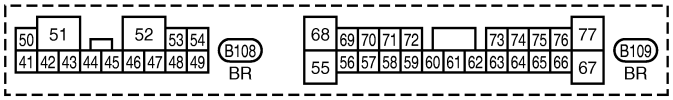
AV-AV-23

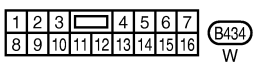




REFER TO THE FOLLOWING.
B1, D1, D31 - SUPER MULTIPLE JUNCTION (SMJ)

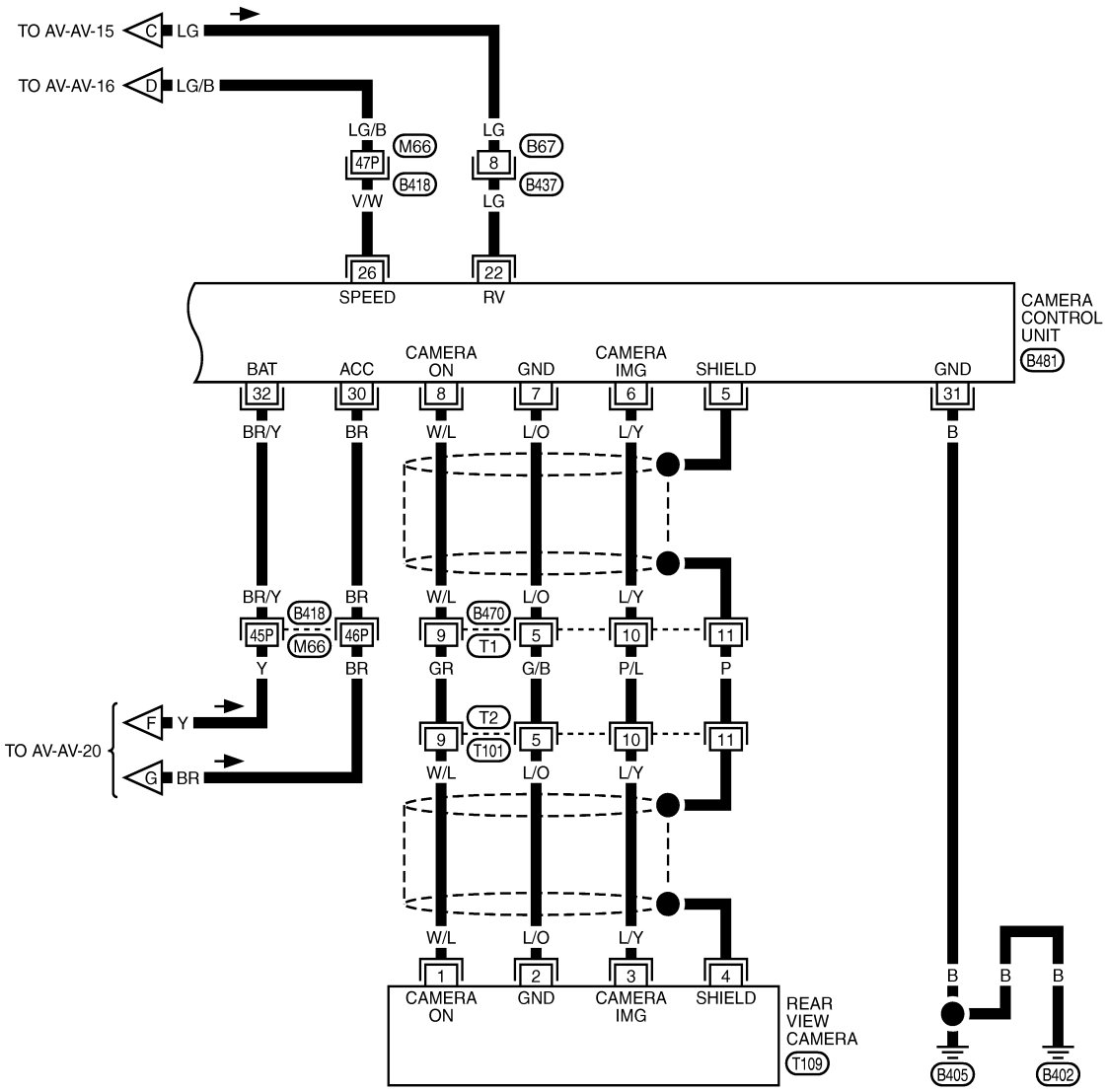


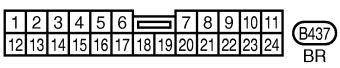


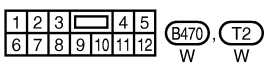


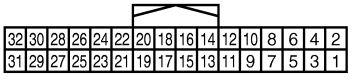
TKWT6698E

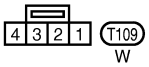
AV-AV-24









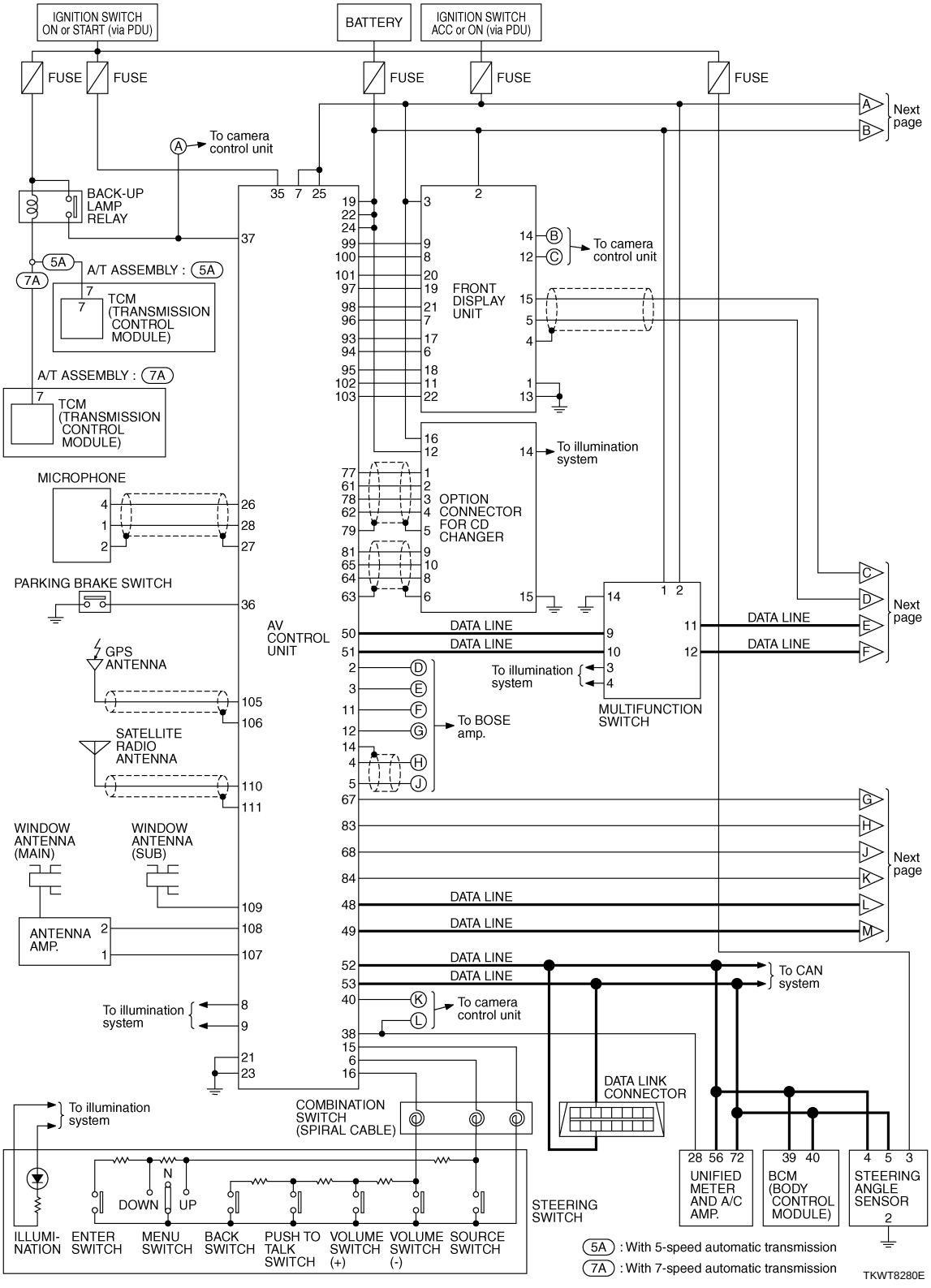


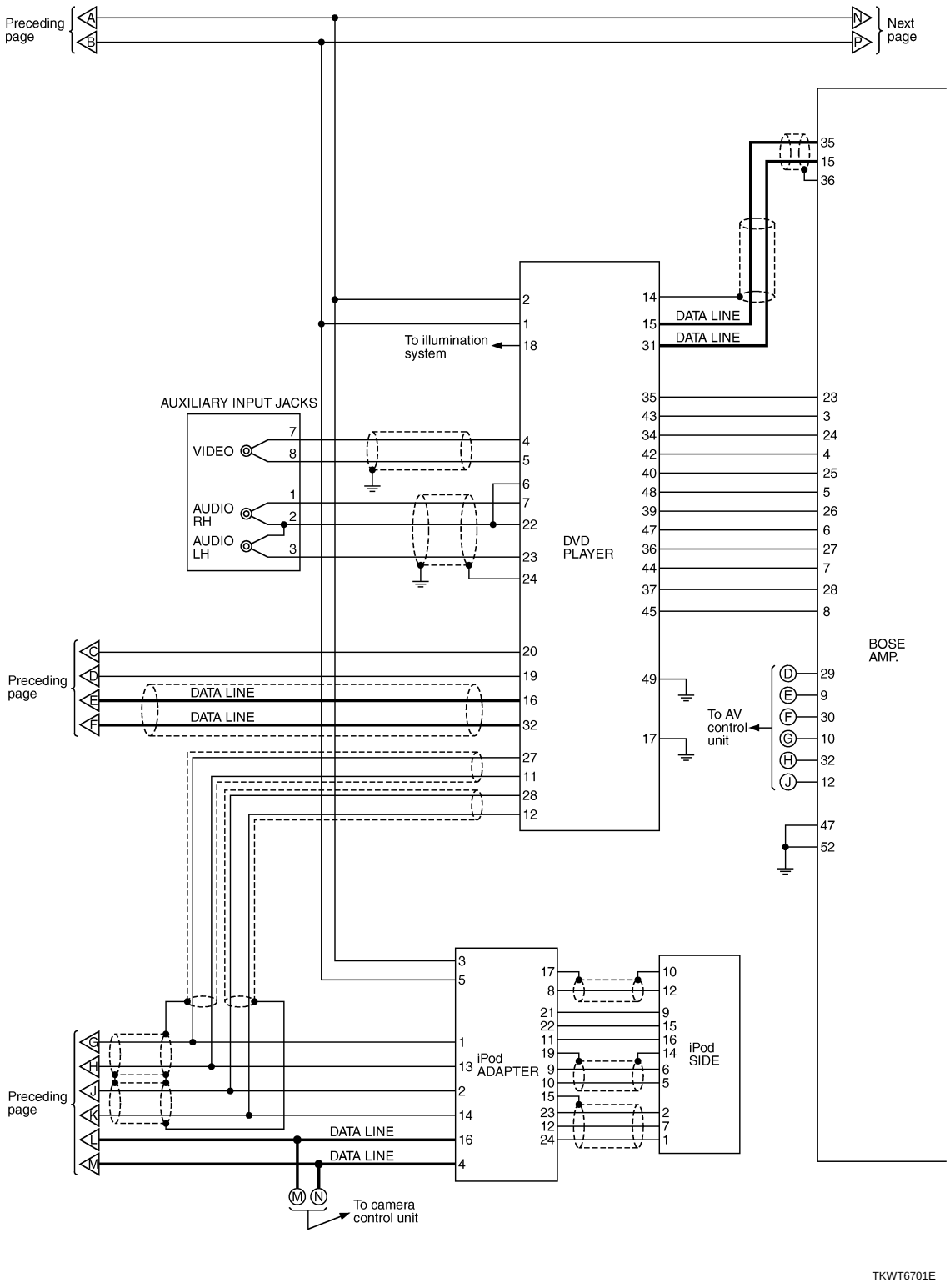
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6699E

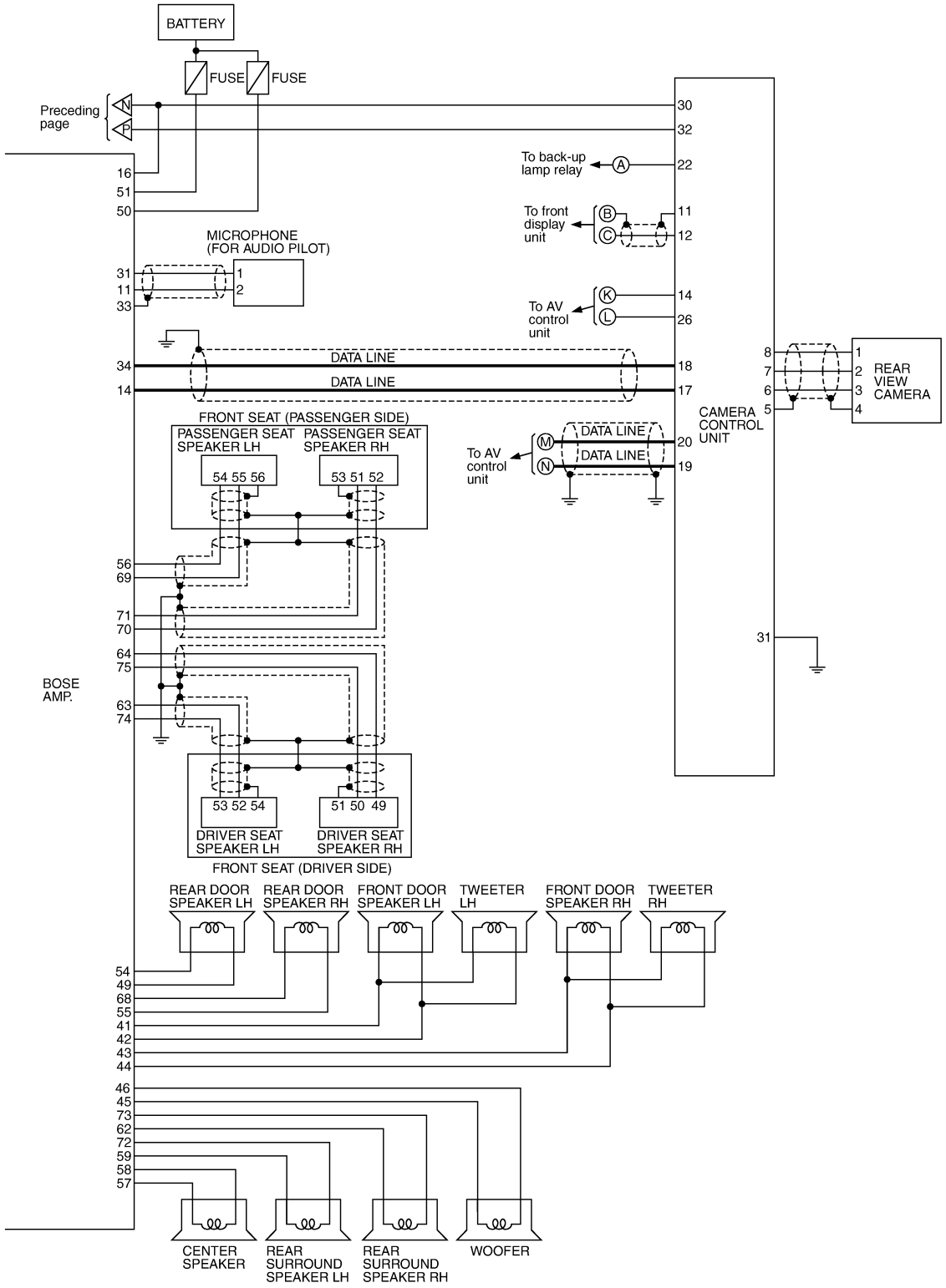
WITH NAVIGATION : Schematic - BOSE Surround Audio 5.1ch System -

INFOID:0000000004380454




Preceding page
A
B
Next page
N
P
35
15
36
2
1
To illumination system
18
14
DATA LINE
15
DATA LINE
31
AUXILIARY INPUT JACKS
VIDEO
7
8
4
5
6
AUDIO RH
1
2
7
22
AUDIO LH
3
23
24
DVD PLAYER
35
43
34
42
40
48
39
47
36
44
37
45
23
3
24
4
25
5
26
6
27
7
28
8
BOSE AMP.
Preceding page
C
D
E
F
20
19
DATA LINE
16
DATA LINE
32
49
17
To AV control unit
D
E
F
G
H
J
29
9
30
10
32
12
27
11
28
12
47
52
3
5
1
13
2
14
16
4
iPod ADAPTER
17
8
21
22
11
19
9
10
15
23
12
24
10
12
9
15
16
14
6
5
2
7
1
iPod SIDE
Preceding page
G
H
J
K
L
M
DATA LINE
DATA LINE
M
N
To camera control unit

TKWT6701E



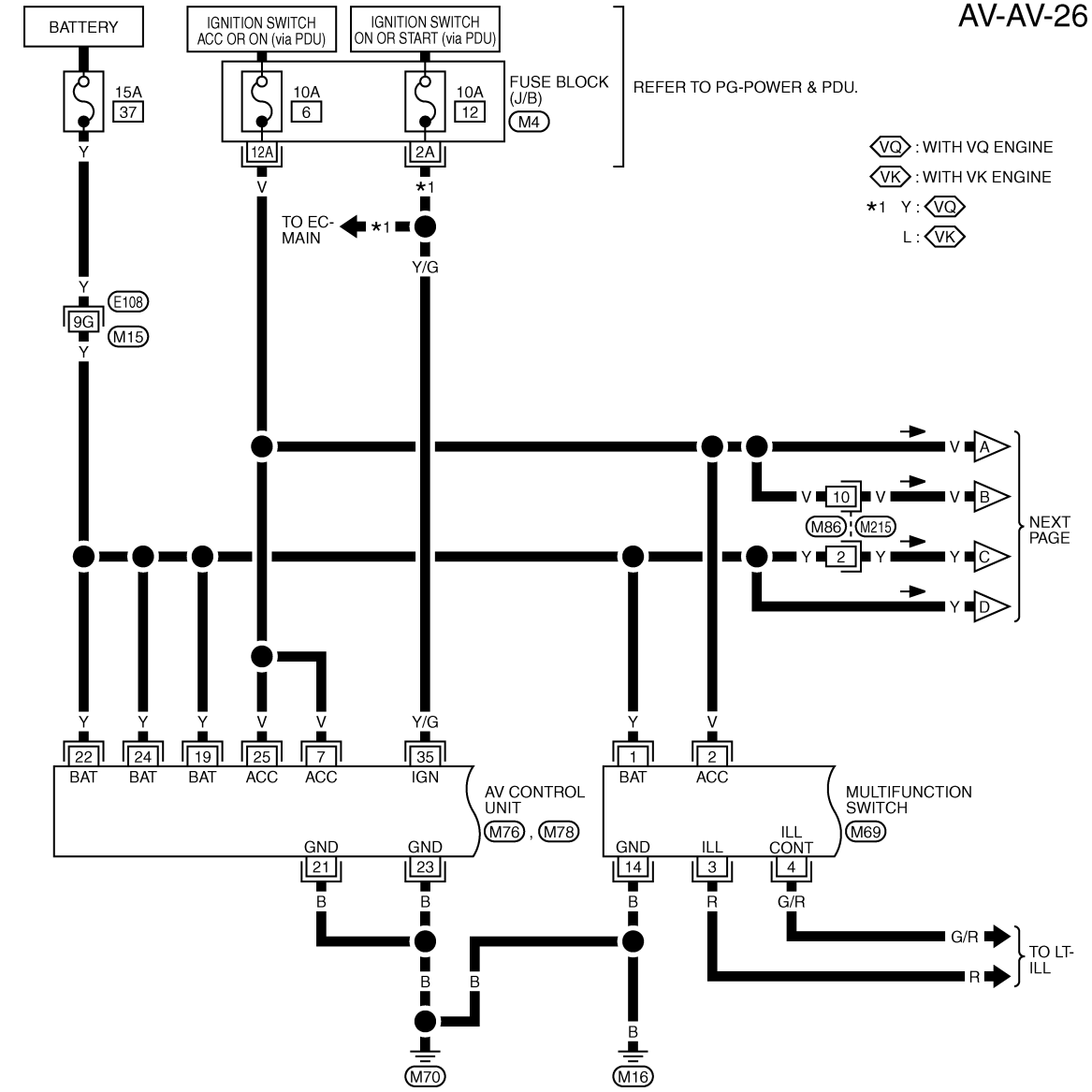
TKWT6702E

WITH NAVIGATION : Wiring Diagram - AV - / BOSE Surround Audio 5.1ch System

INFOID:0000000004380455

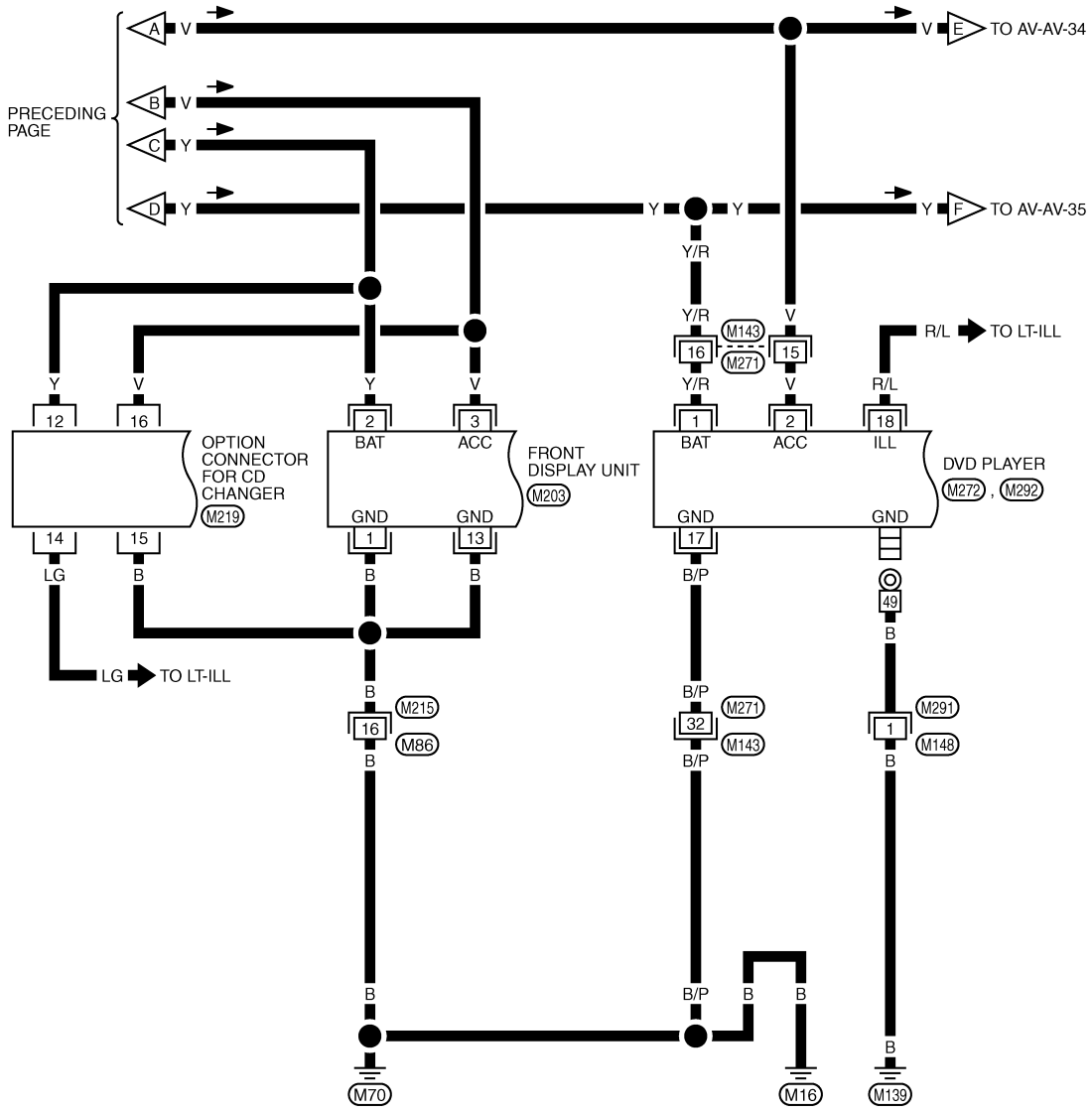
NOTE:

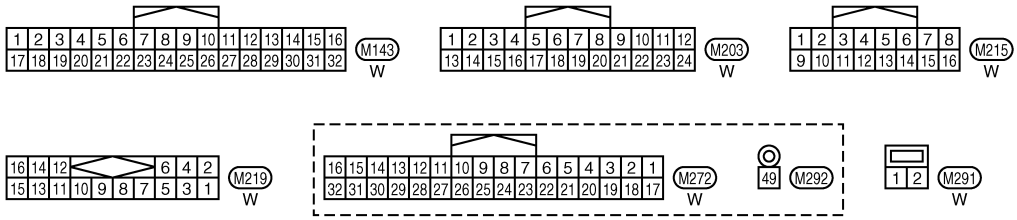
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.



TKWT8281E

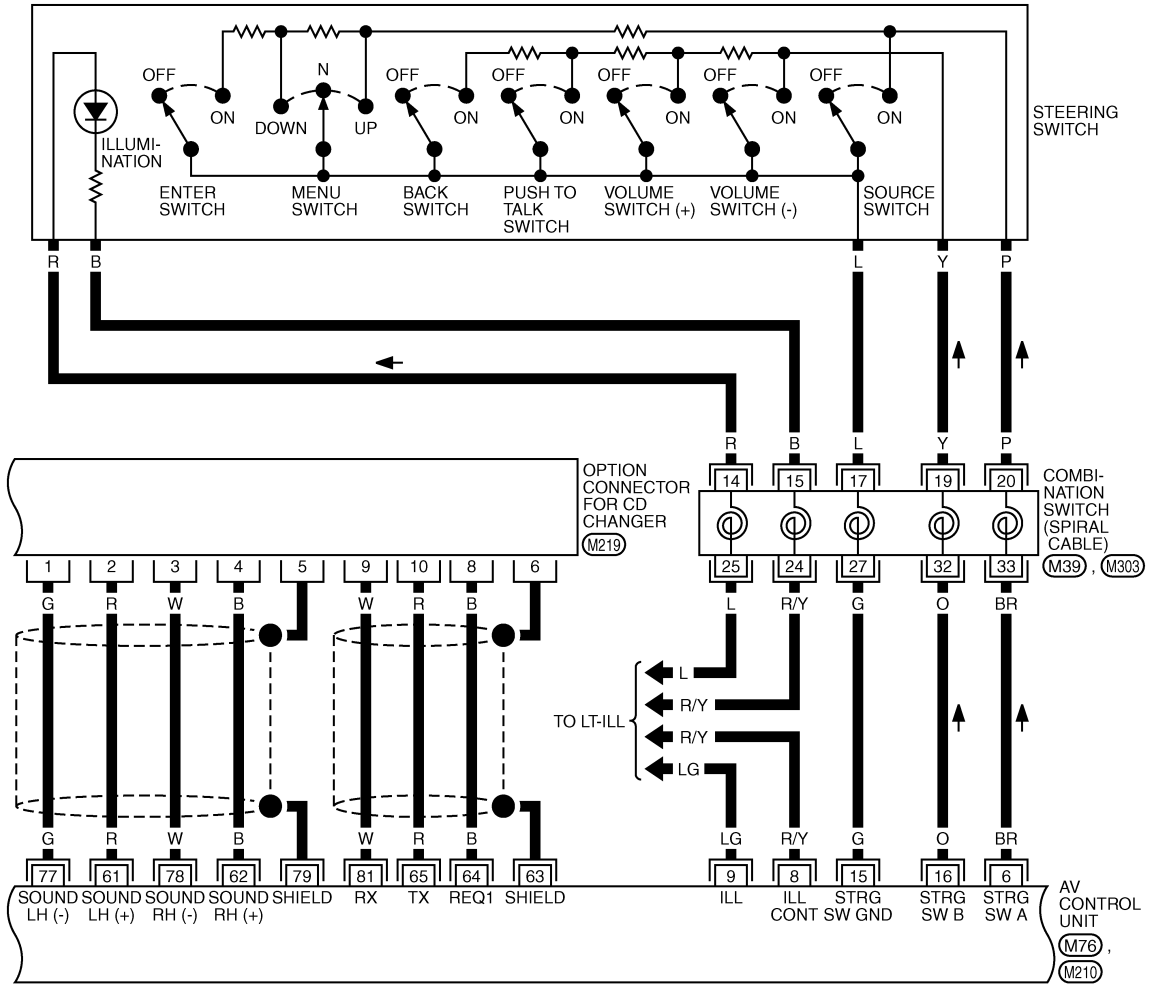
AV-AV-27

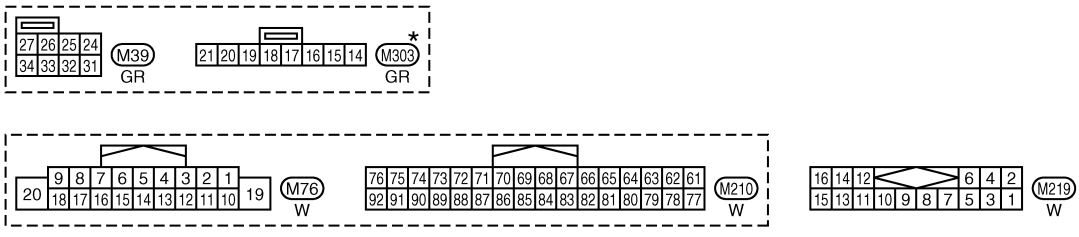




TKWT8282E

AV-AV-28

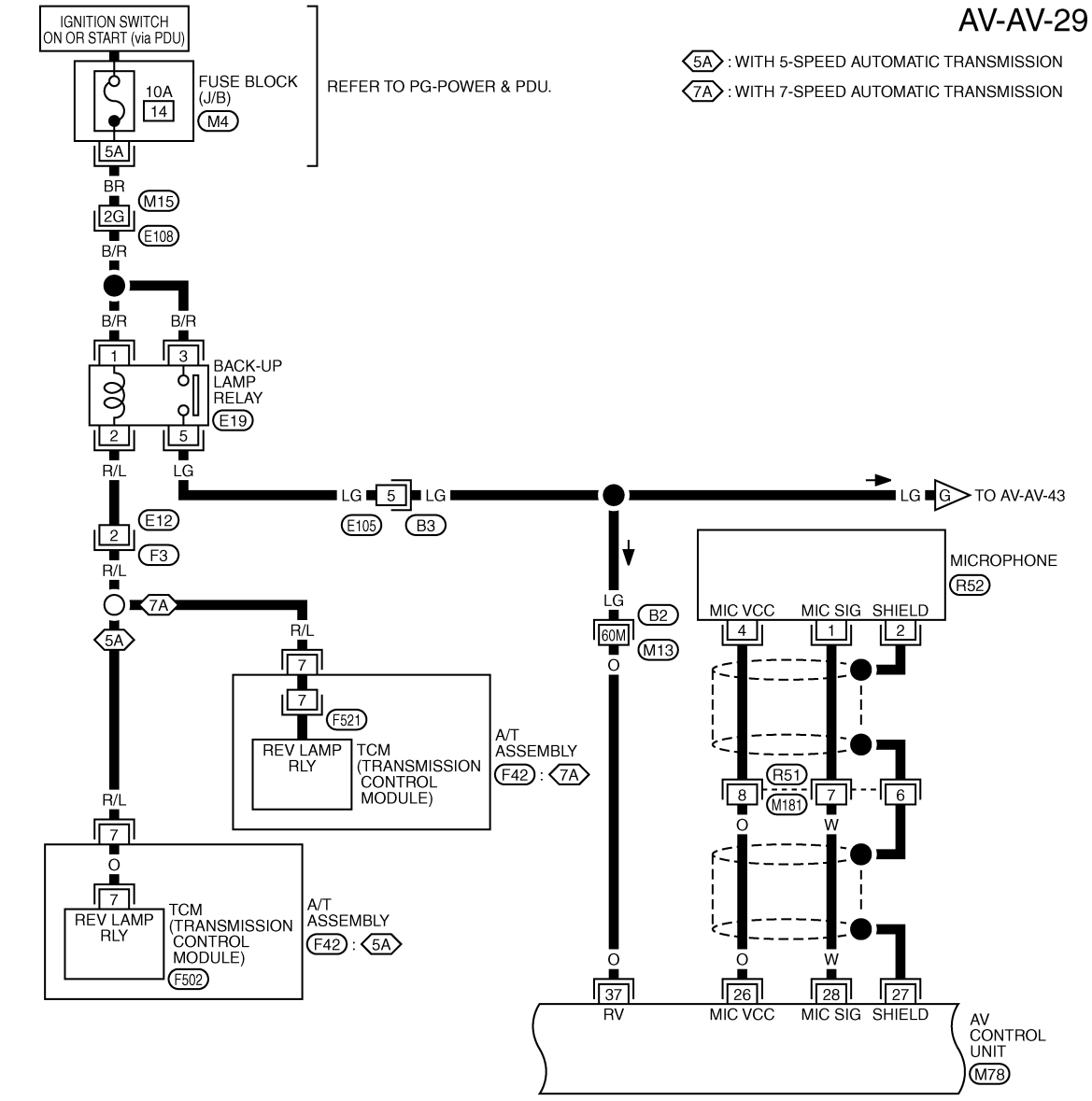


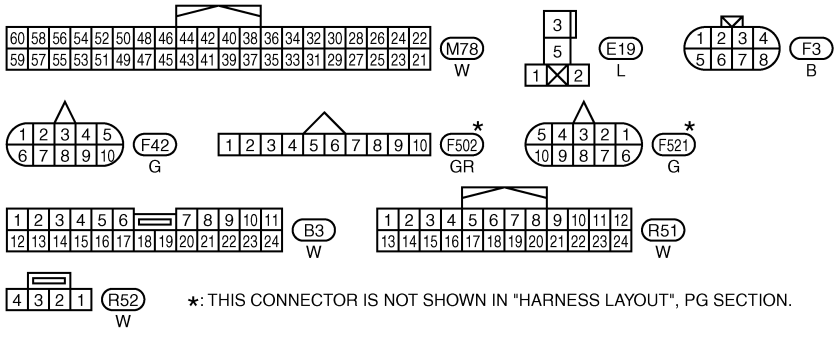


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8283E

AV-AV-29

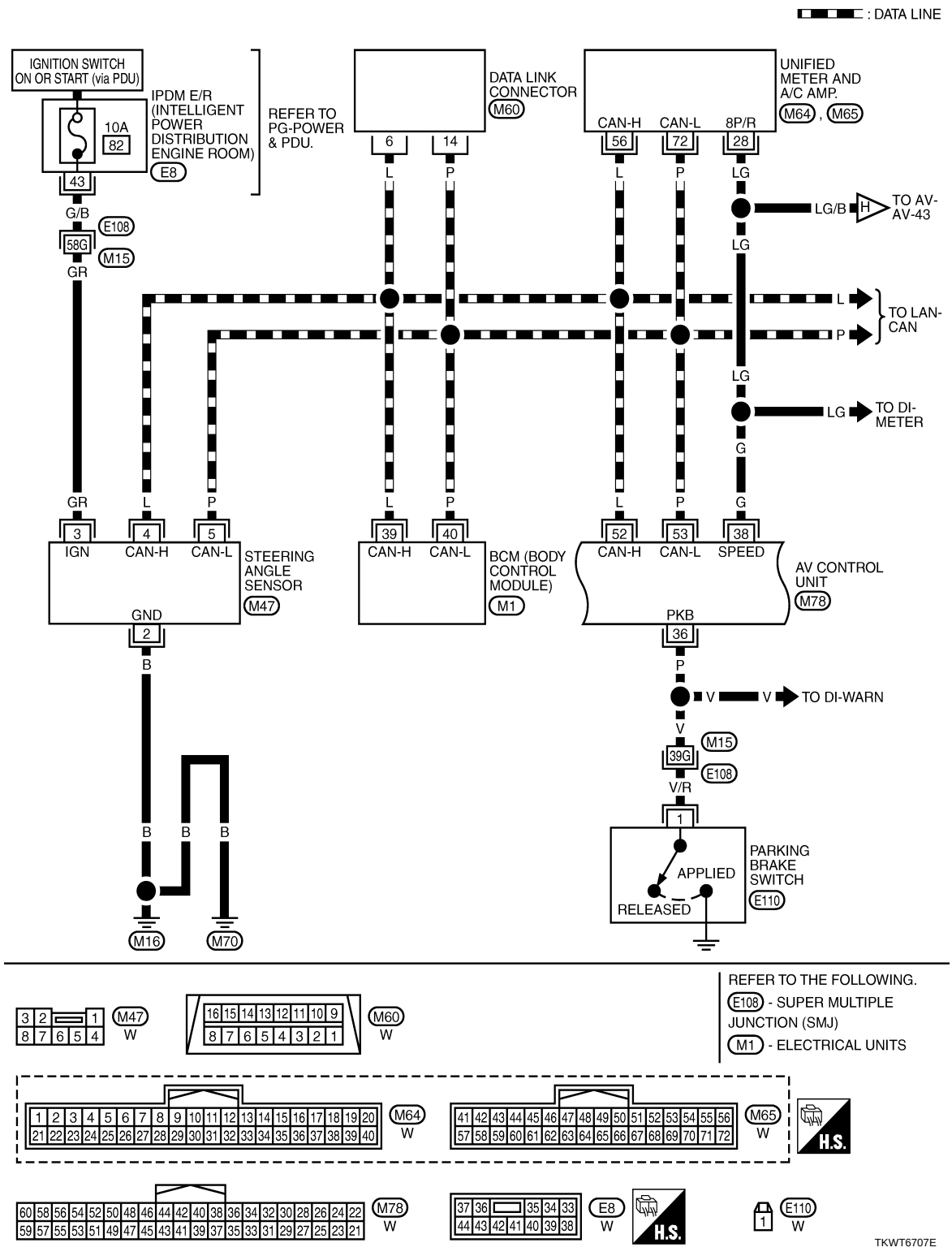




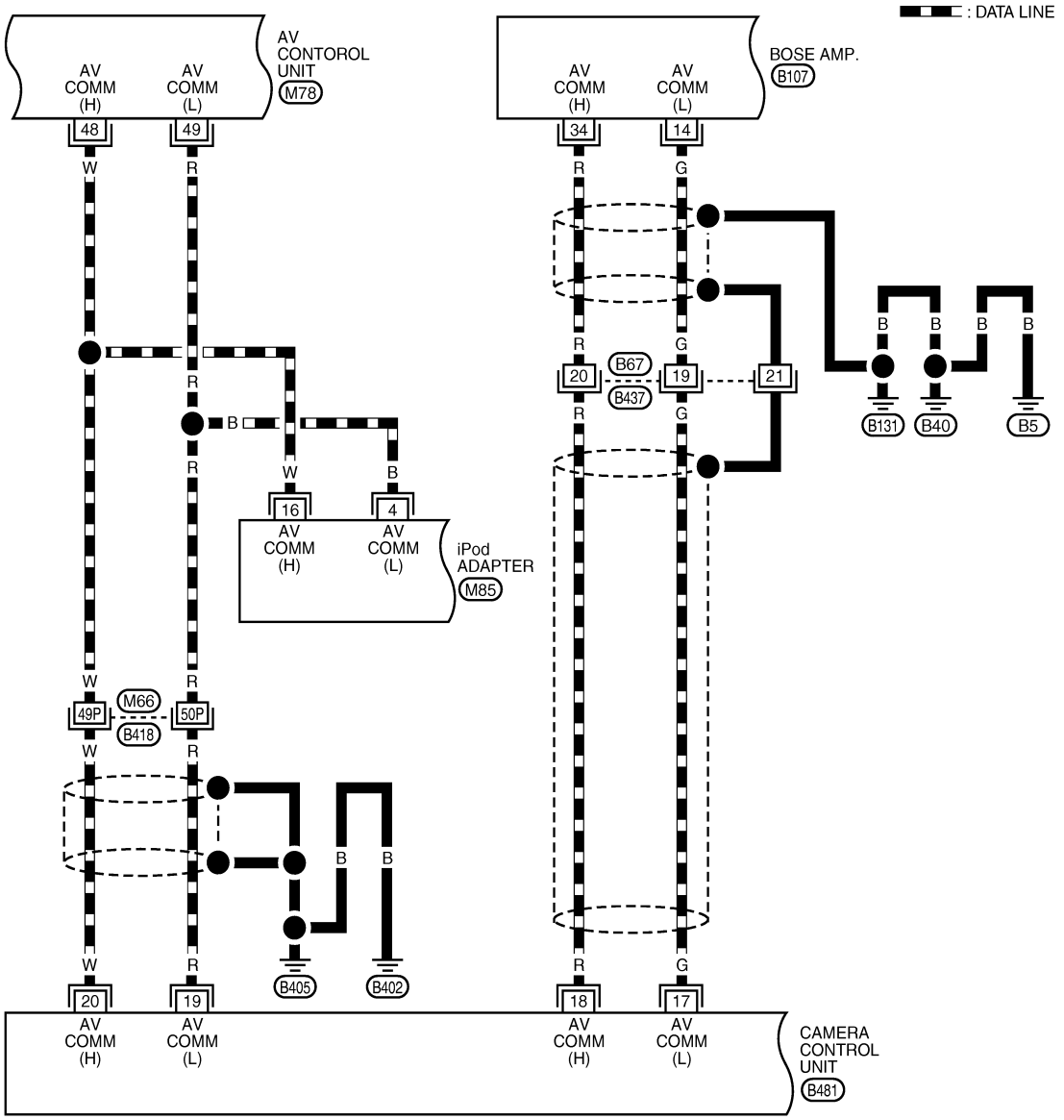
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

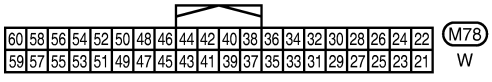
TKWT8284E

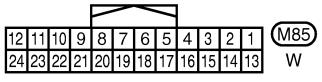
AV-AV-30

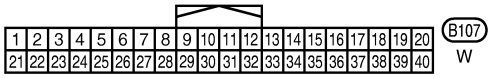

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6 14
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56 72 28
G/B E108
58G M15
GR
L P L P LG
LG/B H TO AV-AV-43
LG
L P TO LAN-CAN
LG LG TO DI-METER
G
GR L P L P L P G
3 4 5 39 40 52 53 38
IGN CAN-H CAN-L STEERING ANGLE SENSOR M47
CAN-H CAN-L BCM (BODY CONTROL MODULE) M1
CAN-H CAN-L SPEED AV CONTROL UNIT M78
GND 2
PKB 36
B
P
V V TO DI-WARN
V
M15
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B B B
M16 M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47 W
M60 W
M64 W
M65 W
H.S.
M78 W
E8 W
E110 W
TKWT6707E

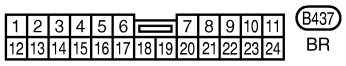
AV-AV-31

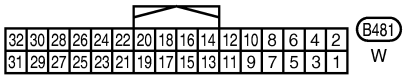








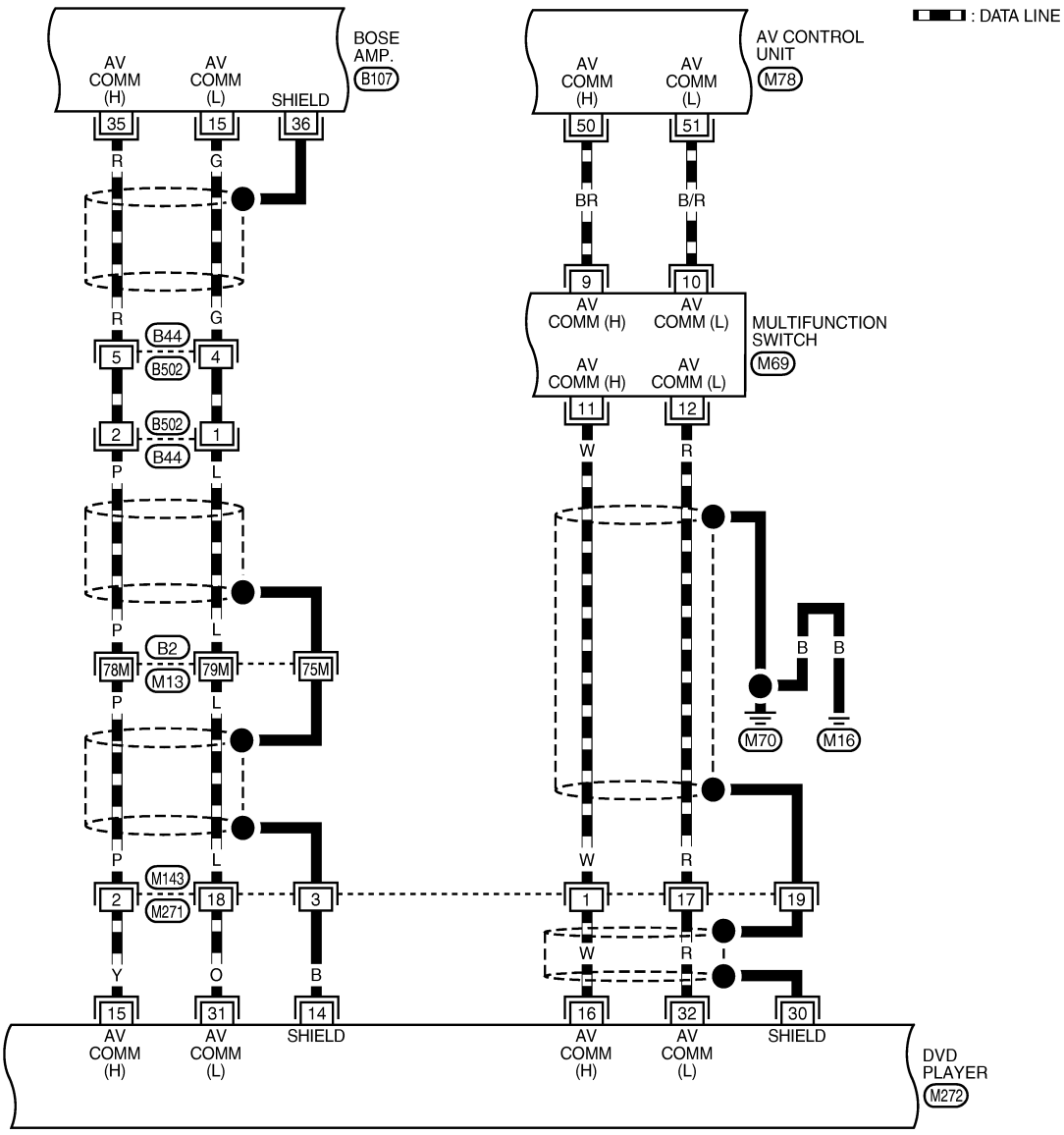


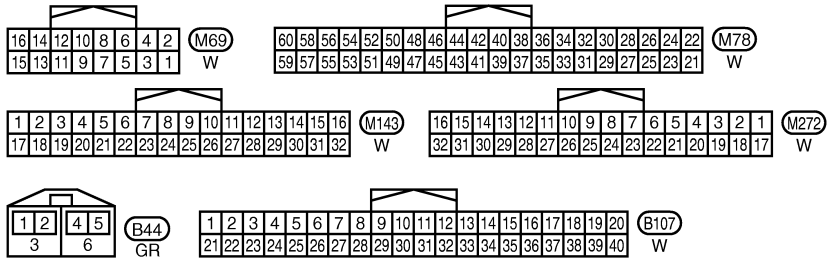


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6708E

AV-AV-32

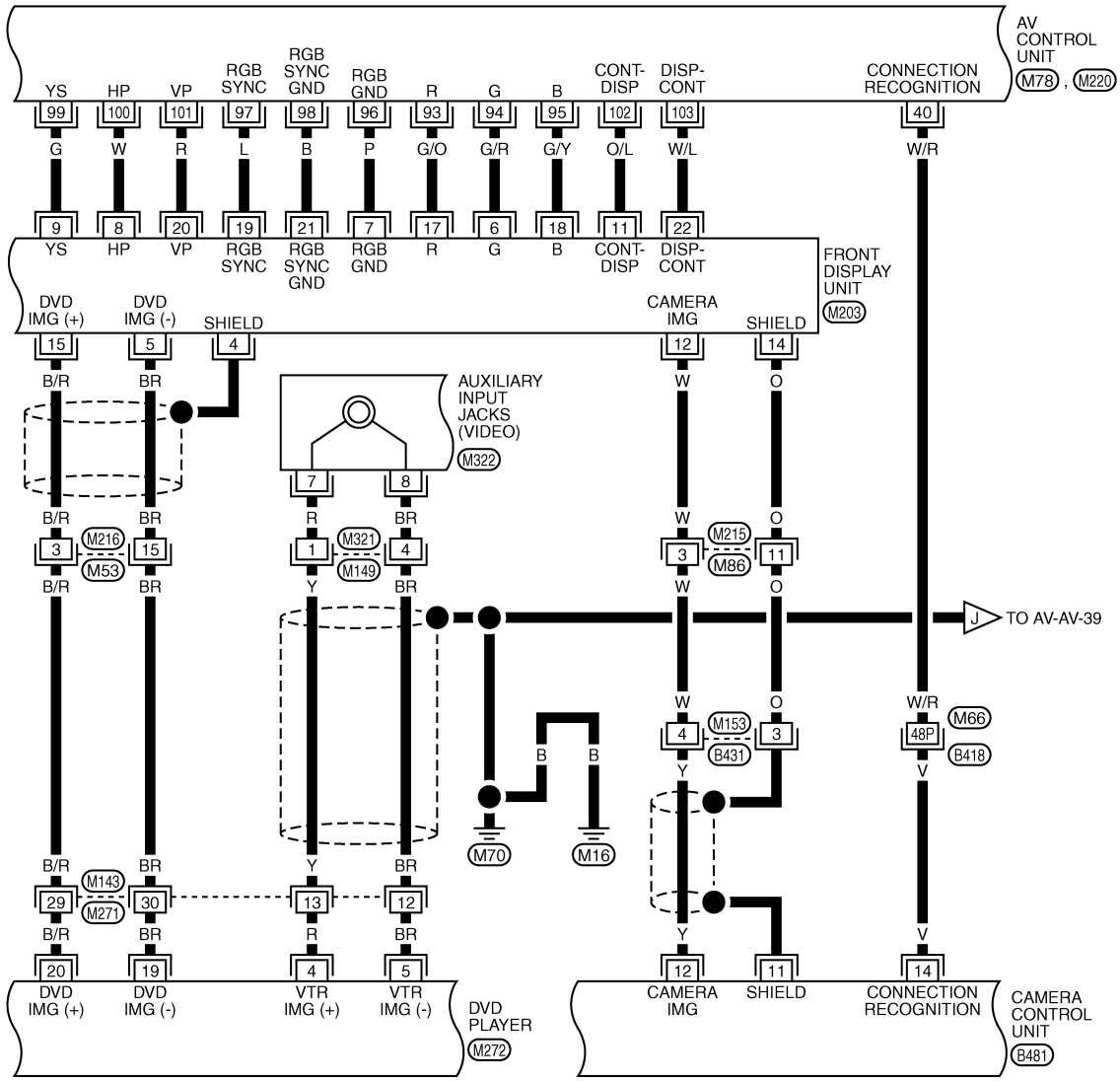


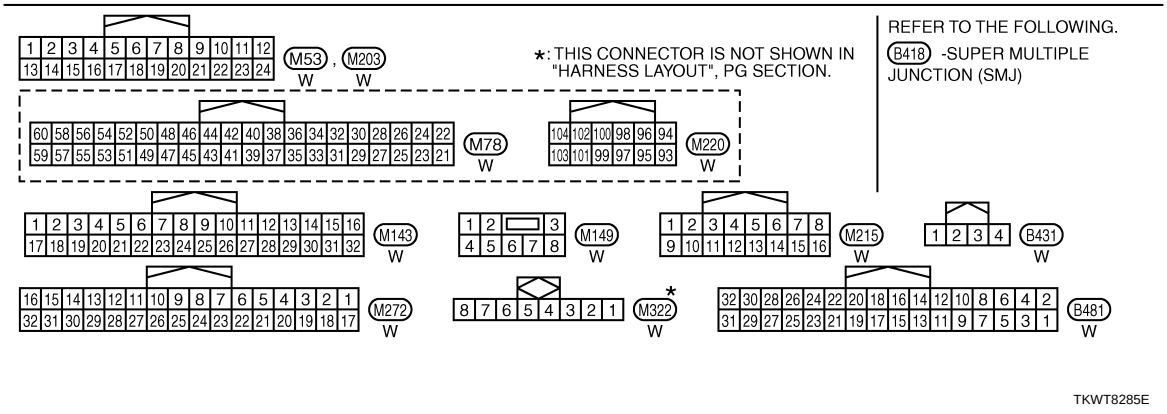


REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6709E

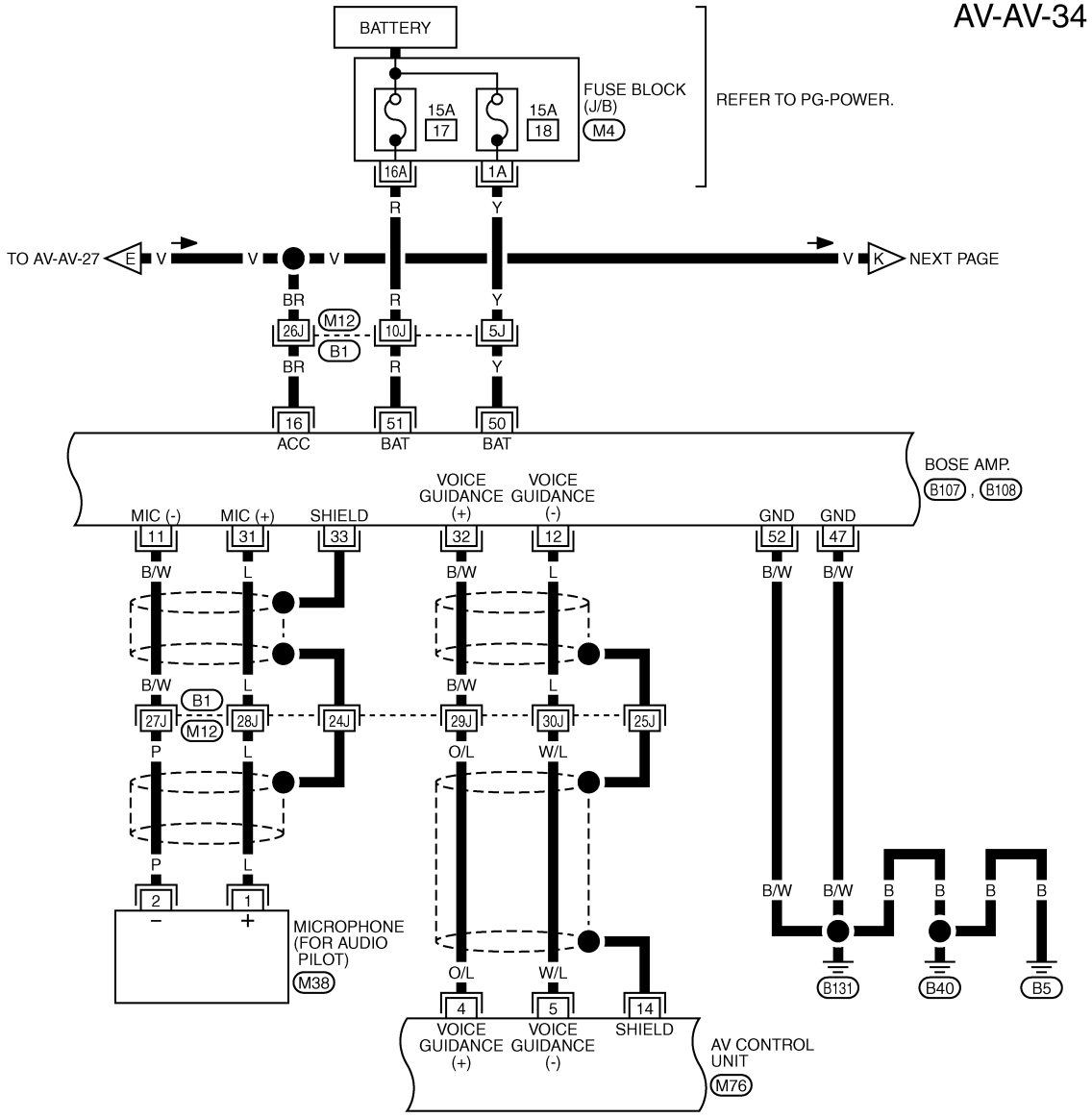
AV-AV-33

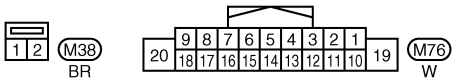


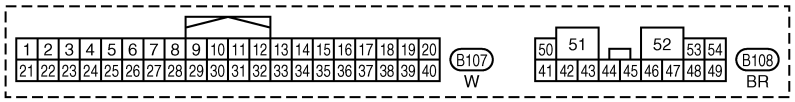


TKWT8285E

AV-AV-34



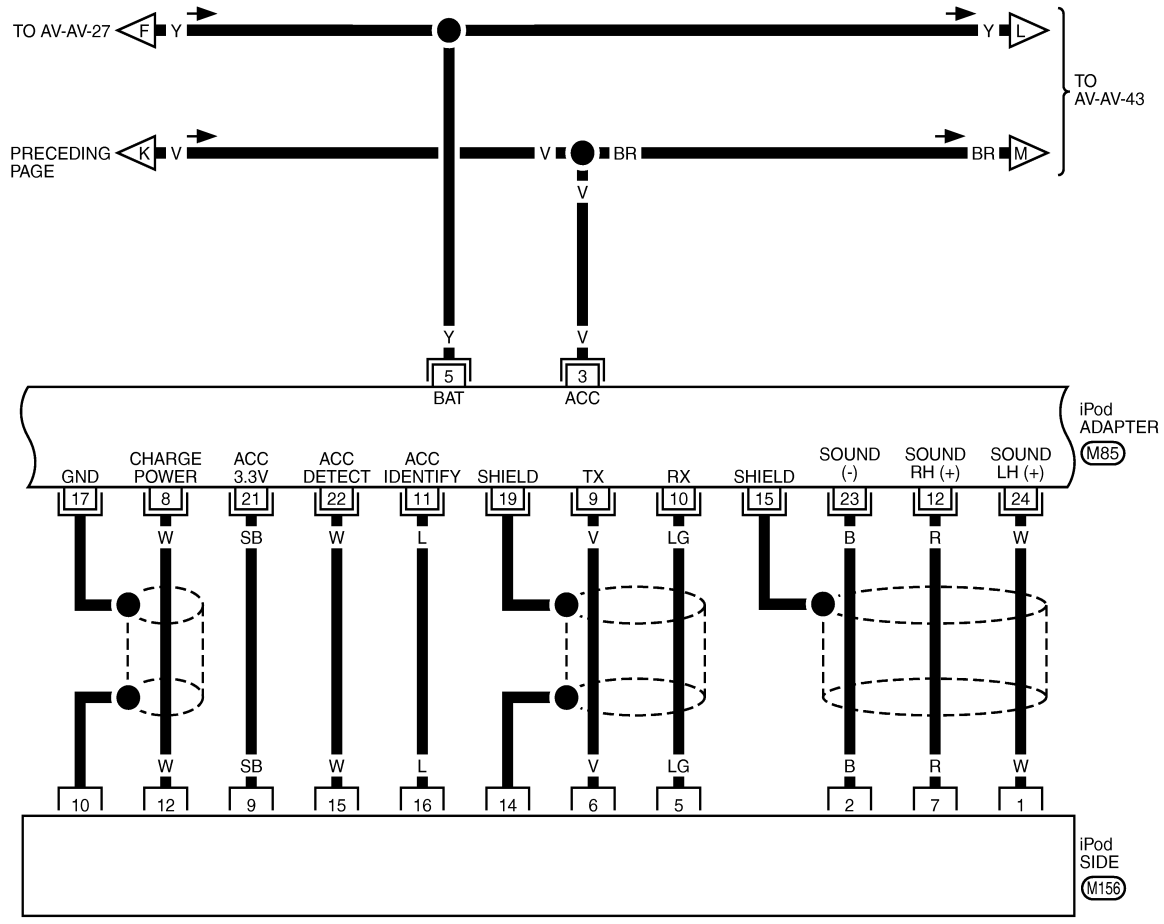


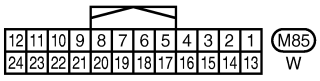


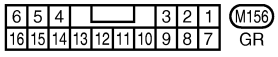
REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8286E

AV-AV-35

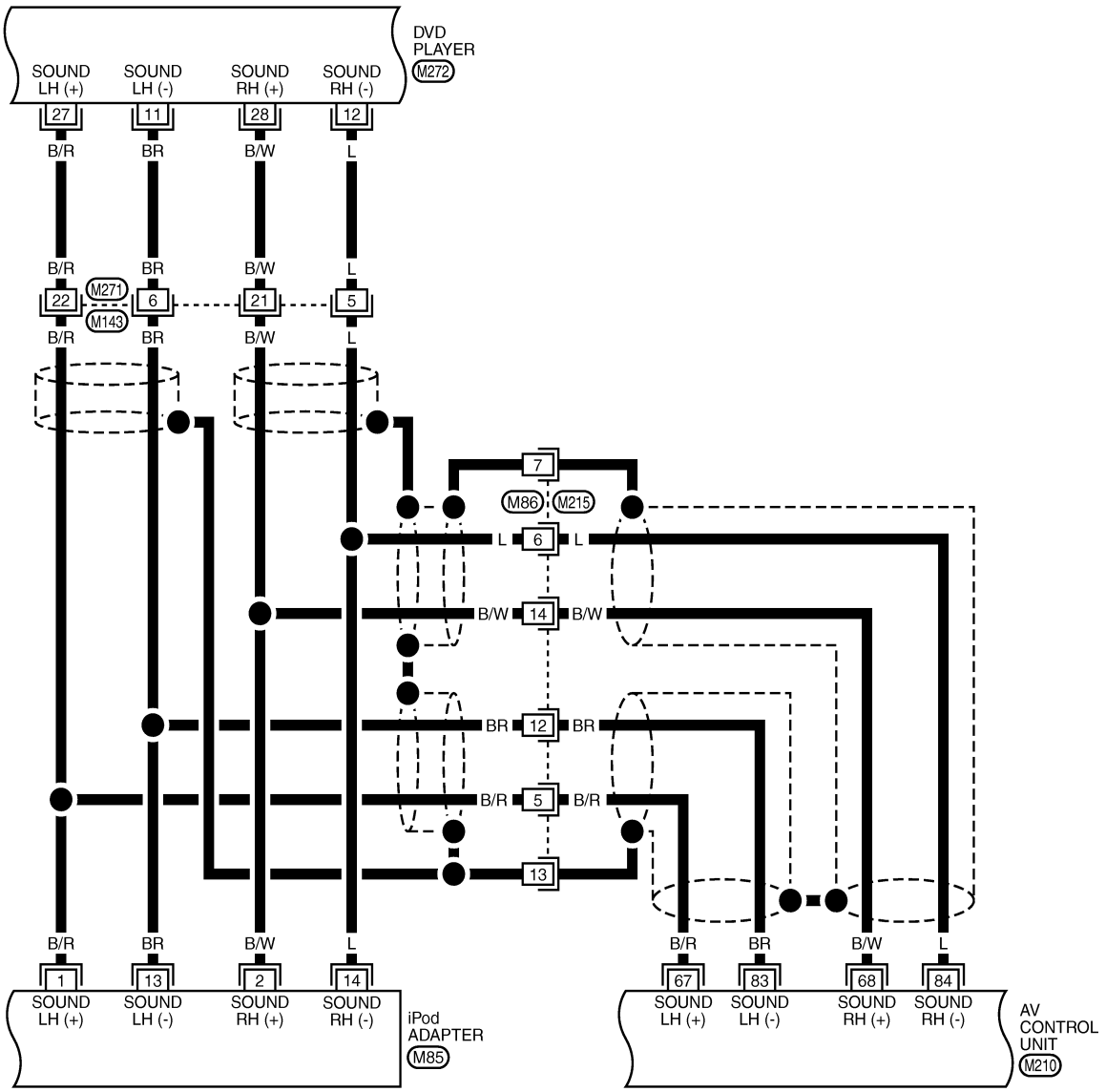


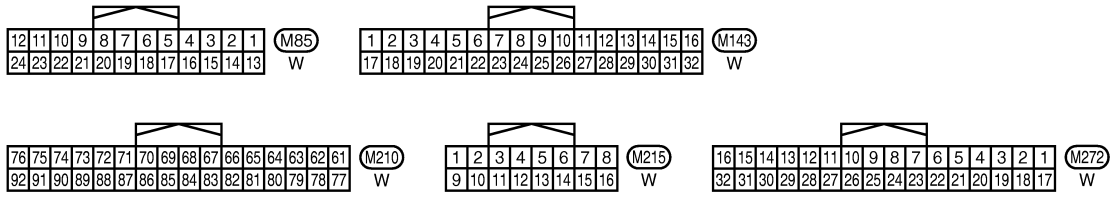




TKWT6713E

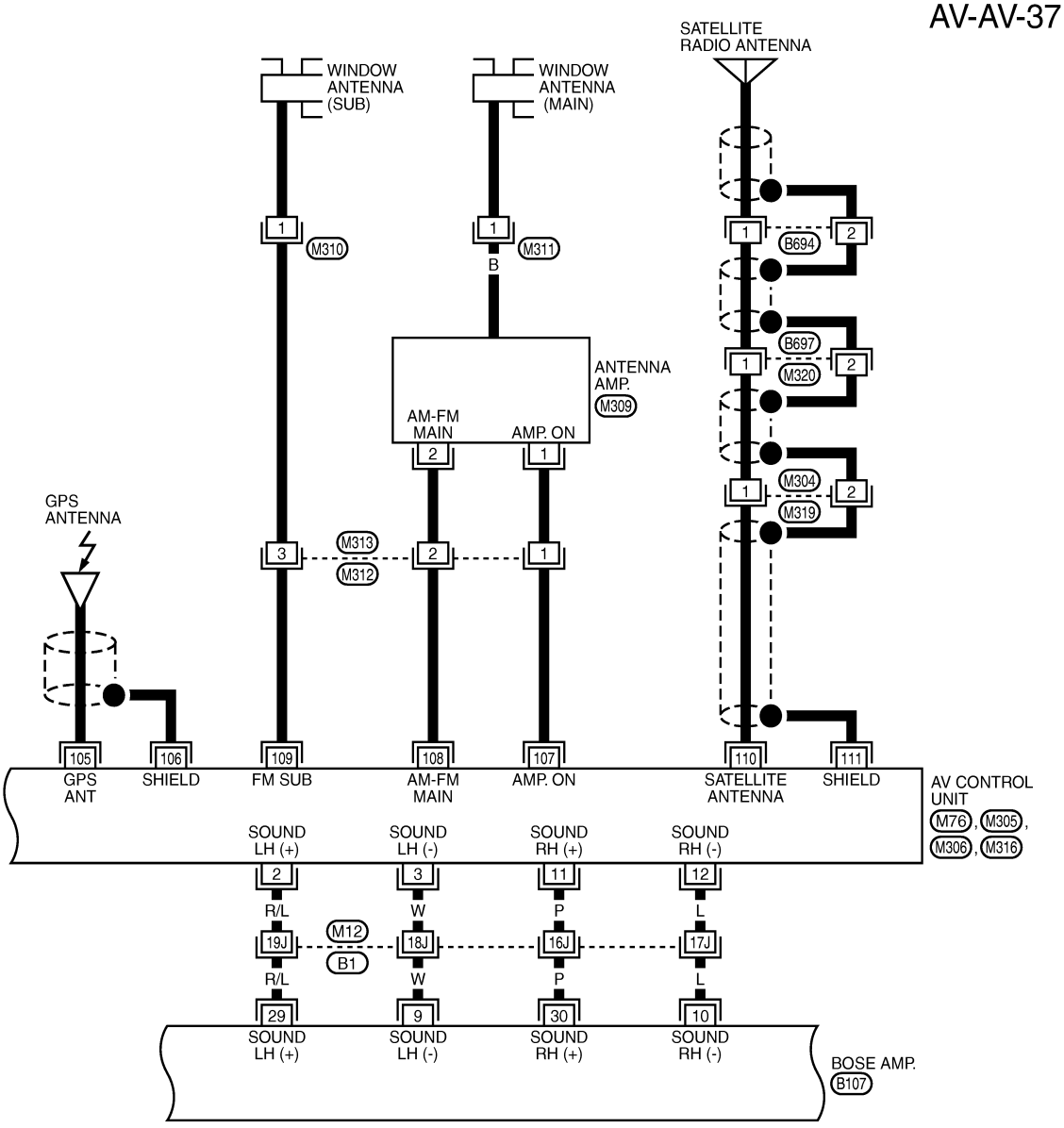
AV-AV-36

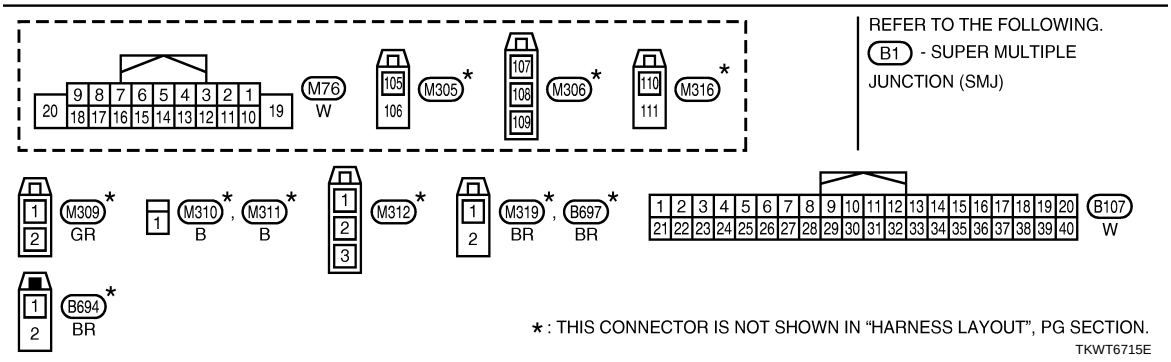




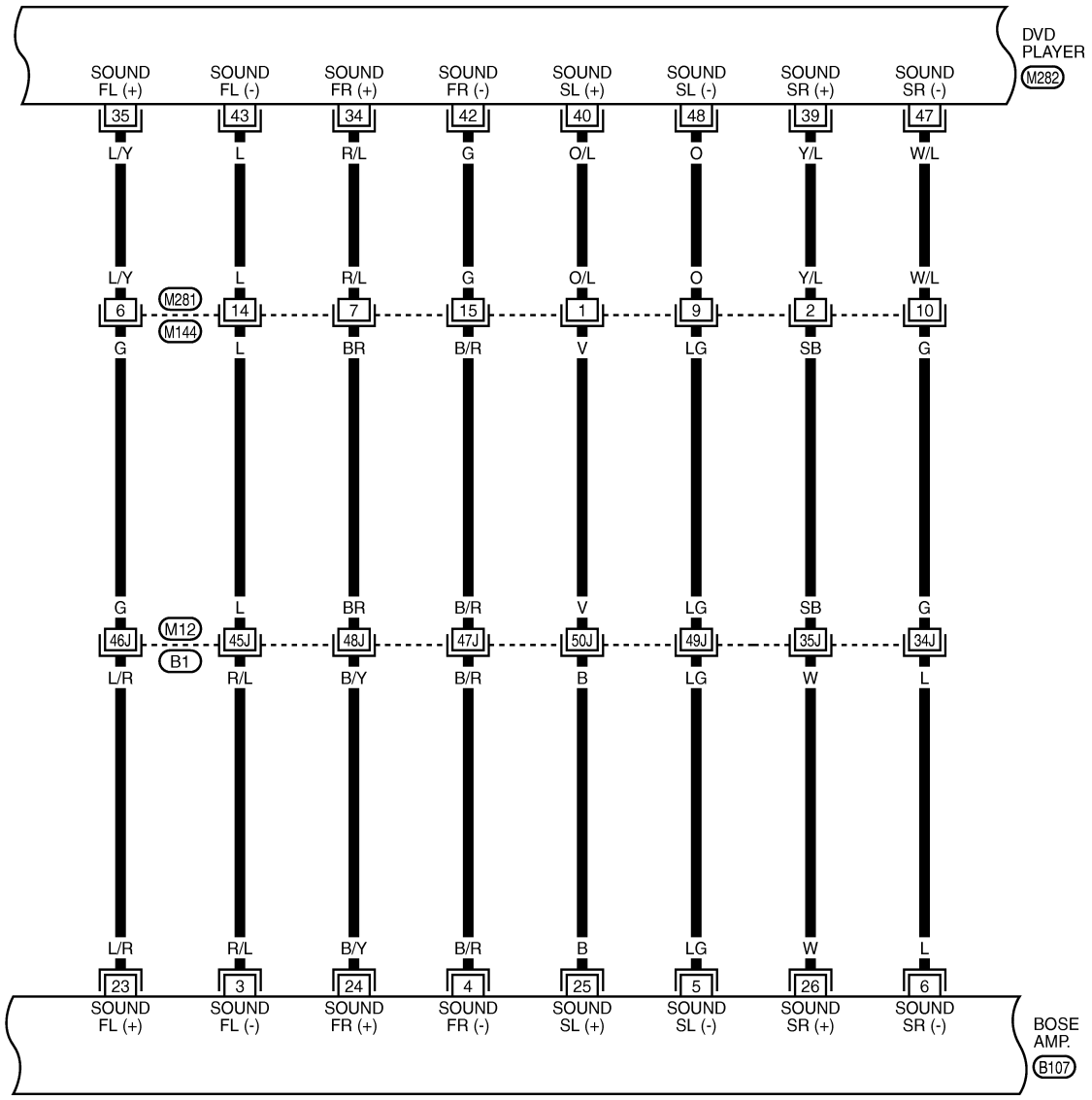
TKWT6714E

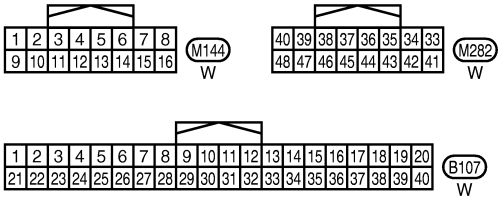
AV-AV-37


SATELLITE RADIO ANTENNA
WINDOW ANTENNA (SUB)
WINDOW ANTENNA (MAIN)
M310
M311
B
B694
B697
M320
M304
M319
ANTENNA AMP.
M309
AM-FM MAIN
AMP. ON
GPS ANTENNA
M313
M312
105
106
109
108
107
110
111
GPS ANT
SHIELD
FM SUB
AM-FM MAIN
AMP. ON
SATELLITE ANTENNA
SHIELD
AV CONTROL UNIT
M76, M305, M306, M316
SOUND LH (+)
SOUND LH (-)
SOUND RH (+)
SOUND RH (-)
R/L
W
P
L
M12
B1
19J
18J
16J
17J
29
9
30
10
BOSE AMP.
B107


M76
W
M305
M306
M316
M309
GR
M310
M311
B
M312
M319
M697
BR
B107
W
B694
BR
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)
* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.
TKWT6715E

AV-AV-38

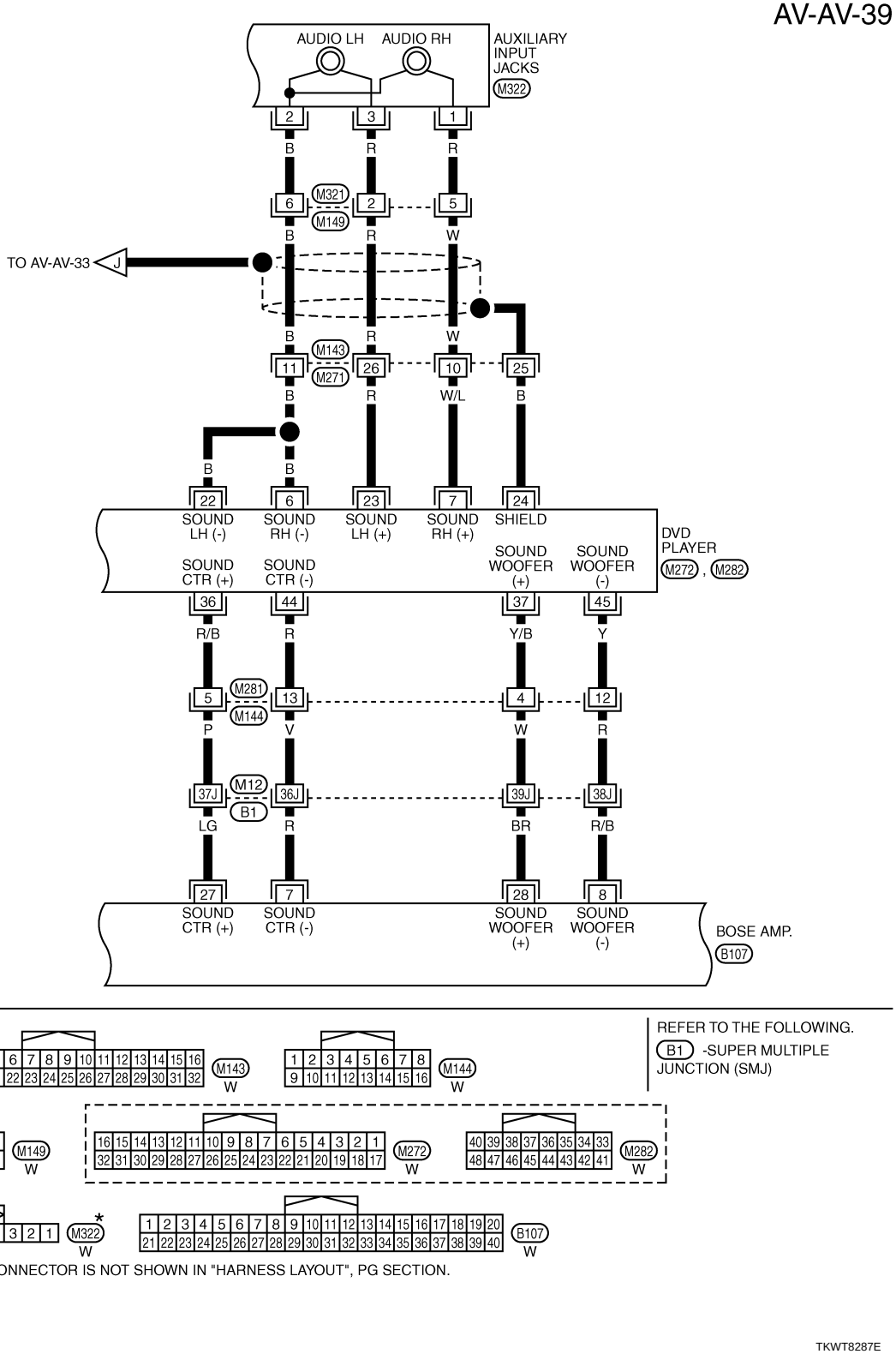




REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

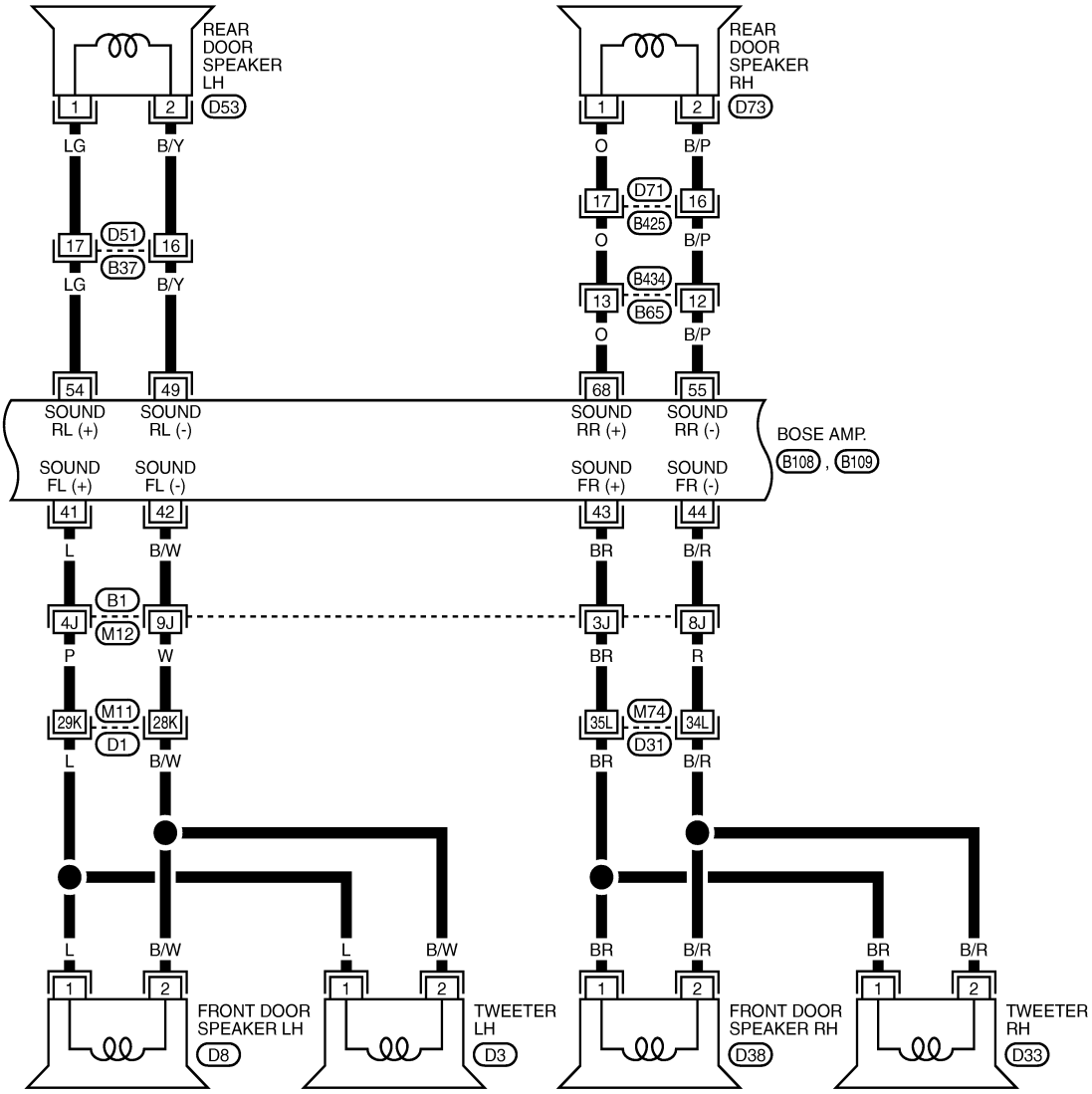
TKWT6716E

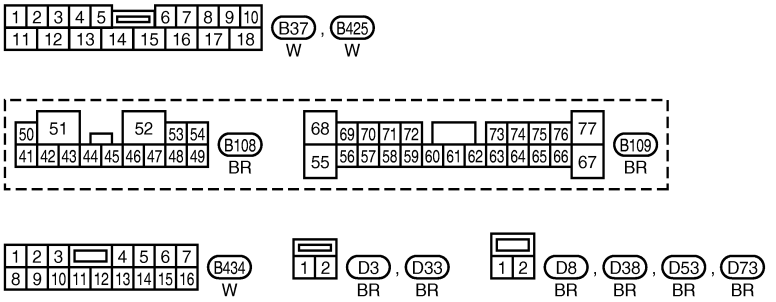
AV-AV-39



TKWT8287E

AV-AV-40

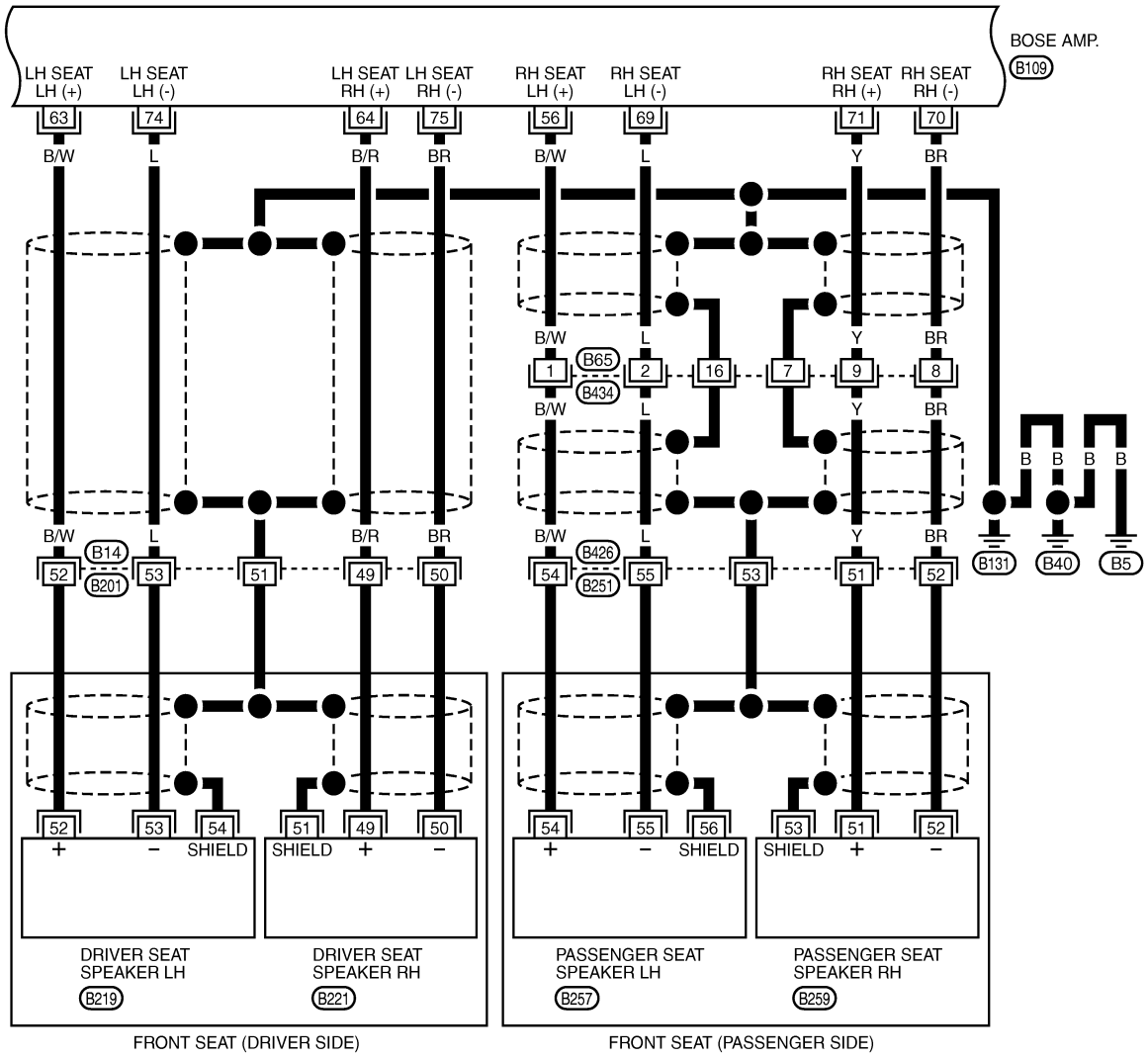


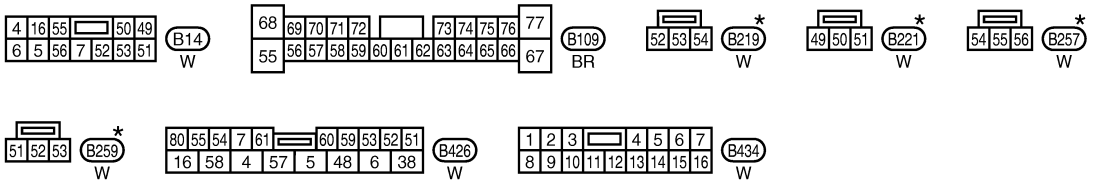


REFER TO THE FOLLOWING.
B1 , D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6718E

AV-AV-41

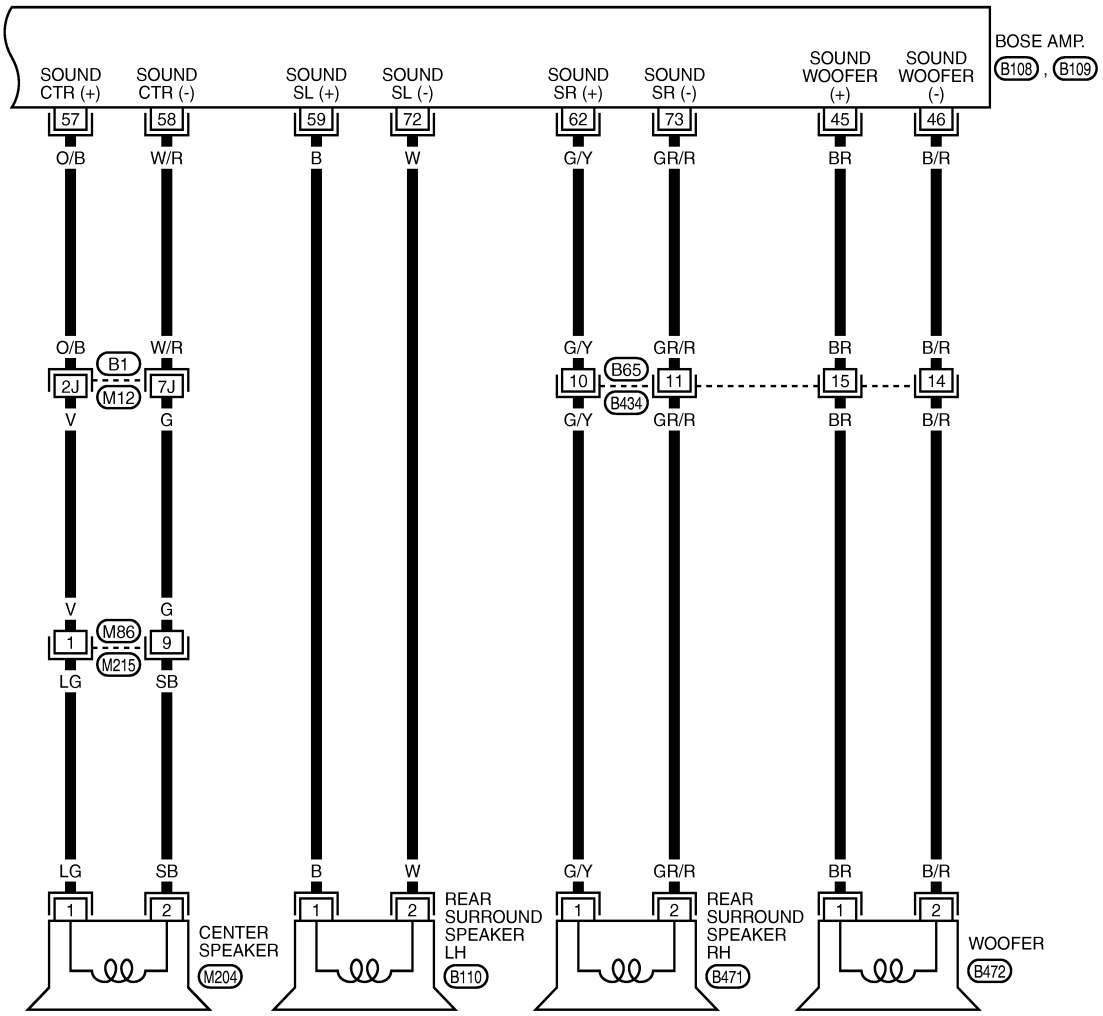


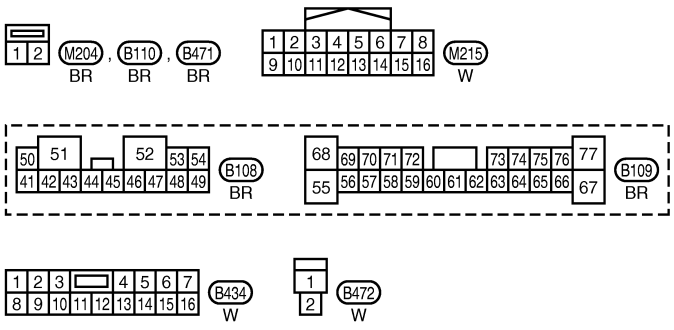


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6719E

AV-AV-42

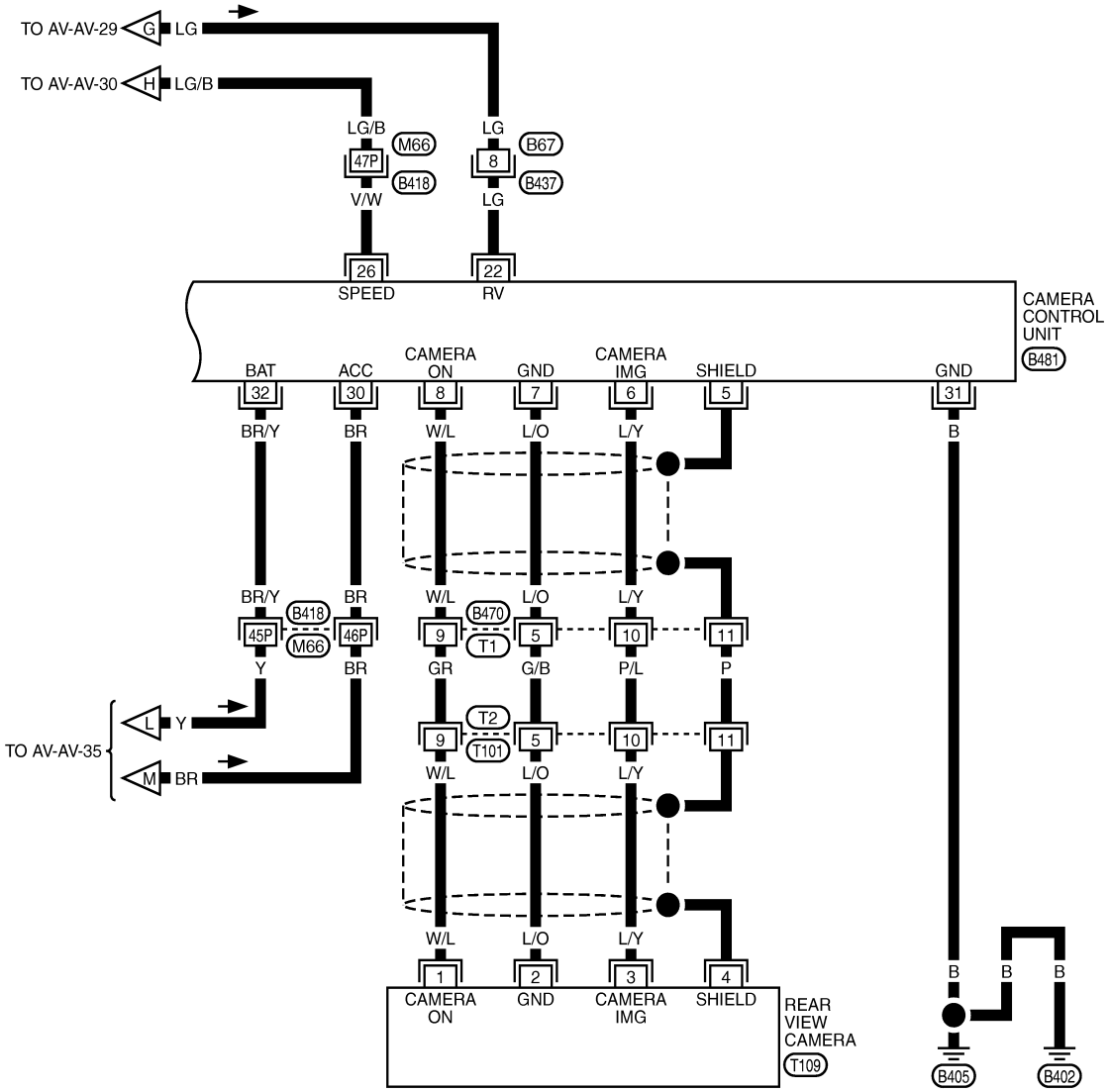


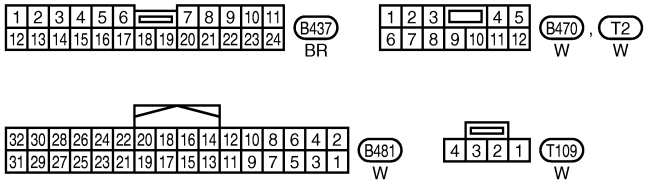


REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6720E

AV-AV-43





REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6721E

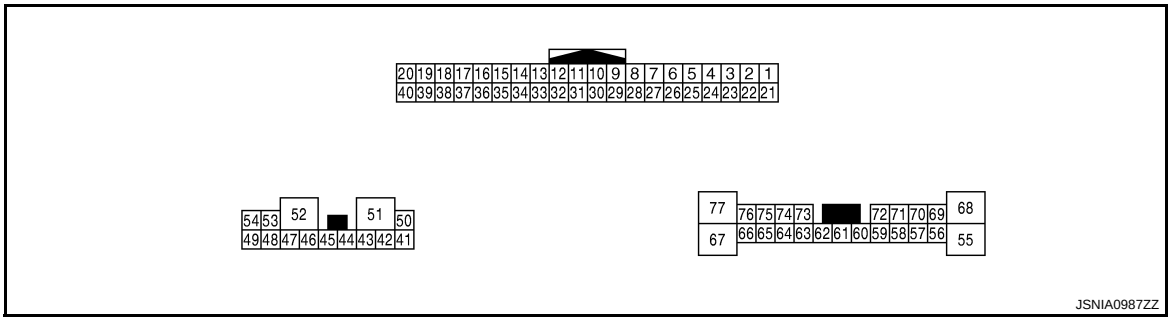
BOSE AMP.

BOSE AUDIO 2CH SYSTEM

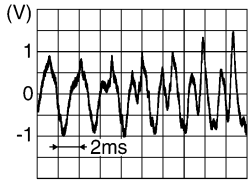
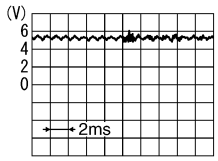
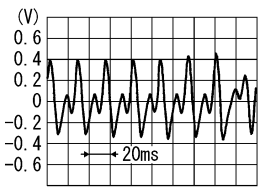
BOSE AUDIO 2CH SYSTEM : Reference Value

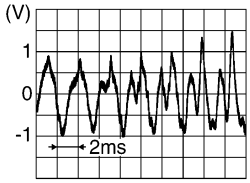
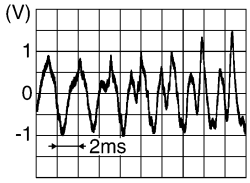
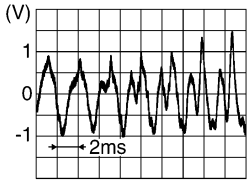
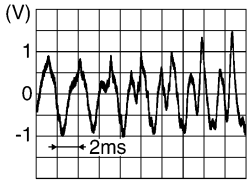
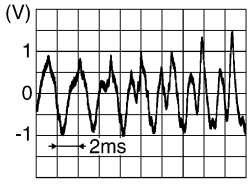
INFOID:0000000004155812

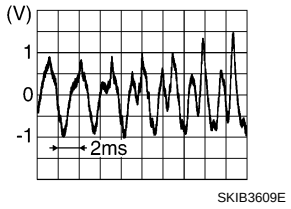
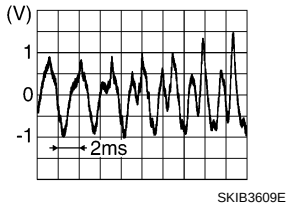
TERMINAL LAYOUT



PHYSICAL VALUES

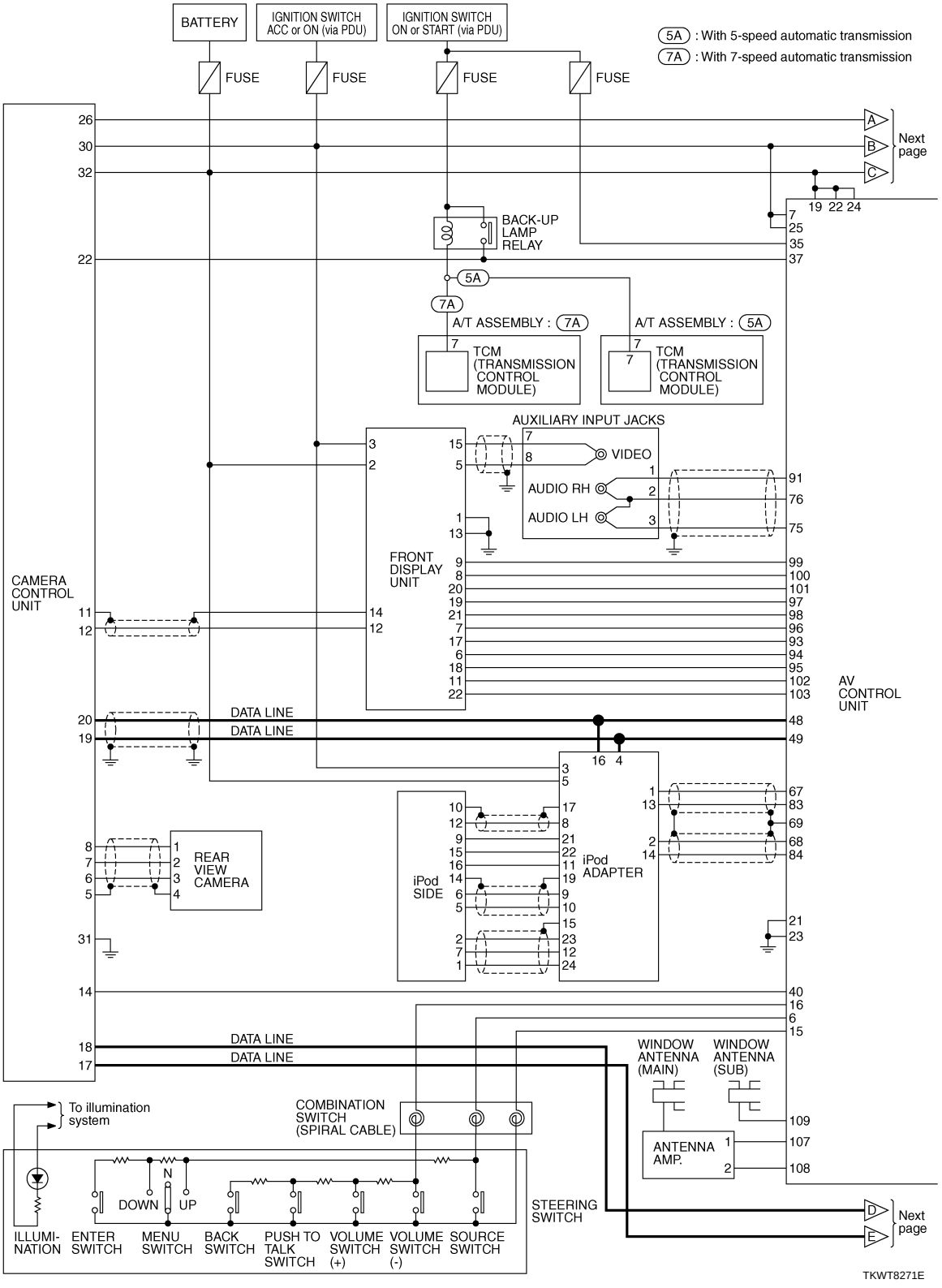
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
16 (B/W)	15 (L)	Voice guidance signal	Input	Ignition switch ON	When inputting voice guidance	 SKIB3609E
25 (L)	26 (B/W)	MIC. signal (for AudioPilot®)	Input	Ignition switch ON	When inputting noise	 (reference value) PKIA2104E
27	—	Shield	—	—	—	—
35 (G)	—	AV communication signal (L)	Input/ Output	—	—	—
36 (G)	—	AV communication signal (L)	Input/ Output	—	—	—
37 (R)	—	AV communication signal (H)	Input/ Output	—	—	—
38 (R)	—	AV communication signal (H)	Input/ Output	—	—	—
45 (BR)	46 (B/R)	Sound signal woofer	Output	Ignition switch ON	Sound output	 PKIB6116J

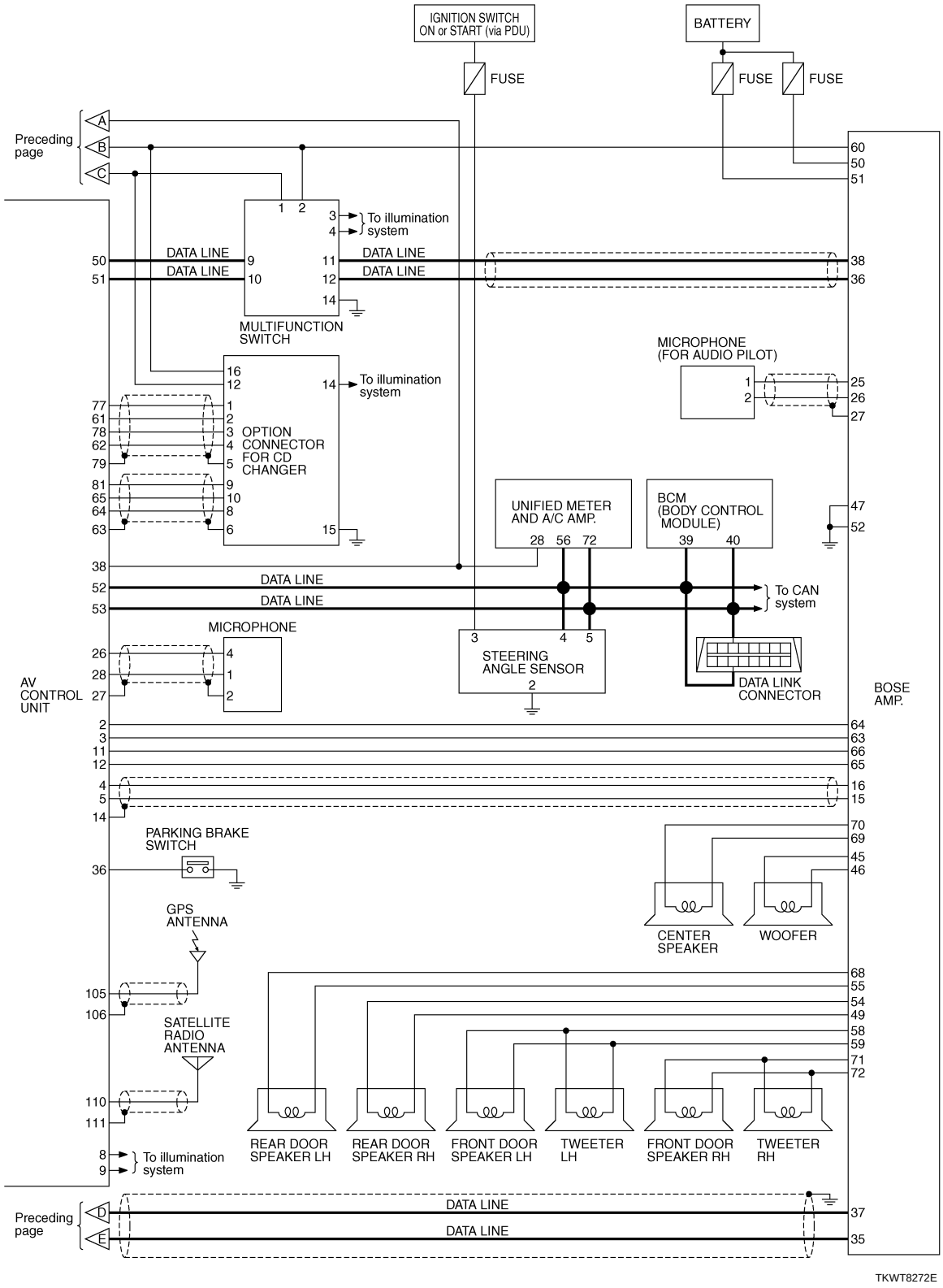
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
47 (B/W)	Ground	Ground	—	Ignition switch ON	—	0 V
50 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
51 (R)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
52 (B/W)	Ground	Ground	—	Ignition switch ON	—	0 V
54 (O)	49 (B/P)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
58 (P)	59 (L/Y)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
60 (BR)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
64 (R/L)	63 (W)	Sound signal LH	Input	Ignition switch ON	Audio sound output	 SKIB3609E
66 (P)	65 (L)	Sound signal RH	Input	Ignition switch ON	Audio sound output	 SKIB3609E
68 (LG)	55 (B/Y)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
69 (V)	70 (G/Y)	Sound signal center speaker	Output	Ignition switch ON	Sound output	 SKIB3609E
71 (BR)	72 (R)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E

BOSE AUDIO 2CH SYSTEM : Schematic - BOSE Audio 2ch System -

INFOID:0000000004380456





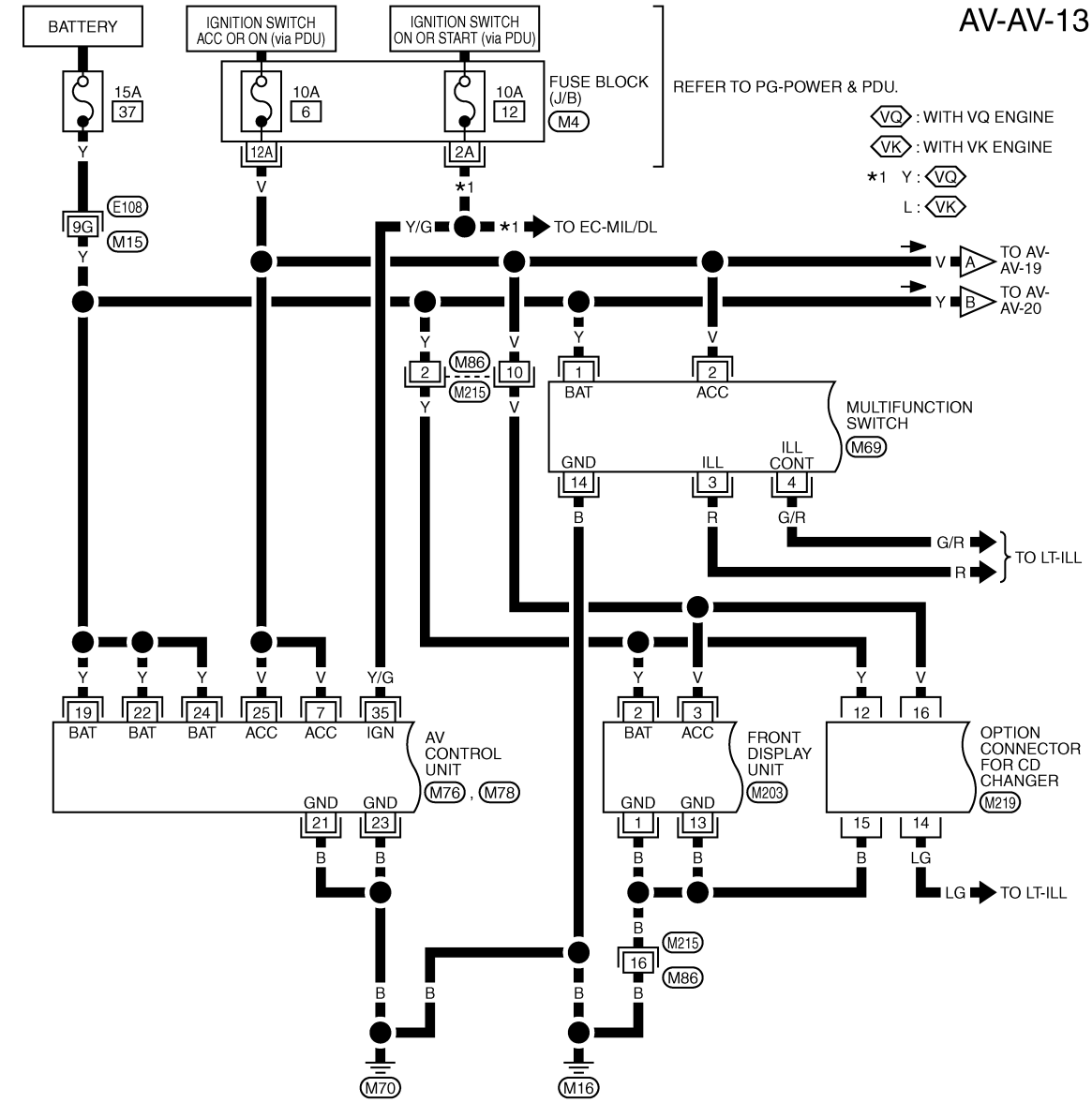
TKWT8272E

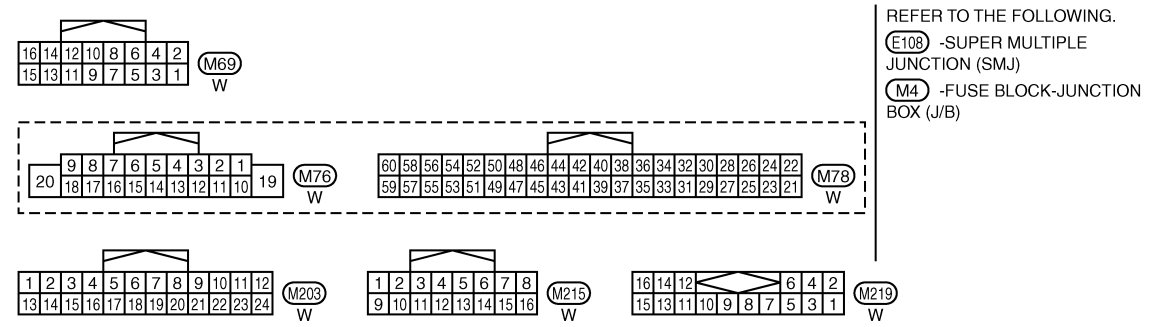
BOSE AUDIO 2CH SYSTEM : Wiring Diagram - AV - / BOSE Audio 2ch System

INFOID:0000000004380457

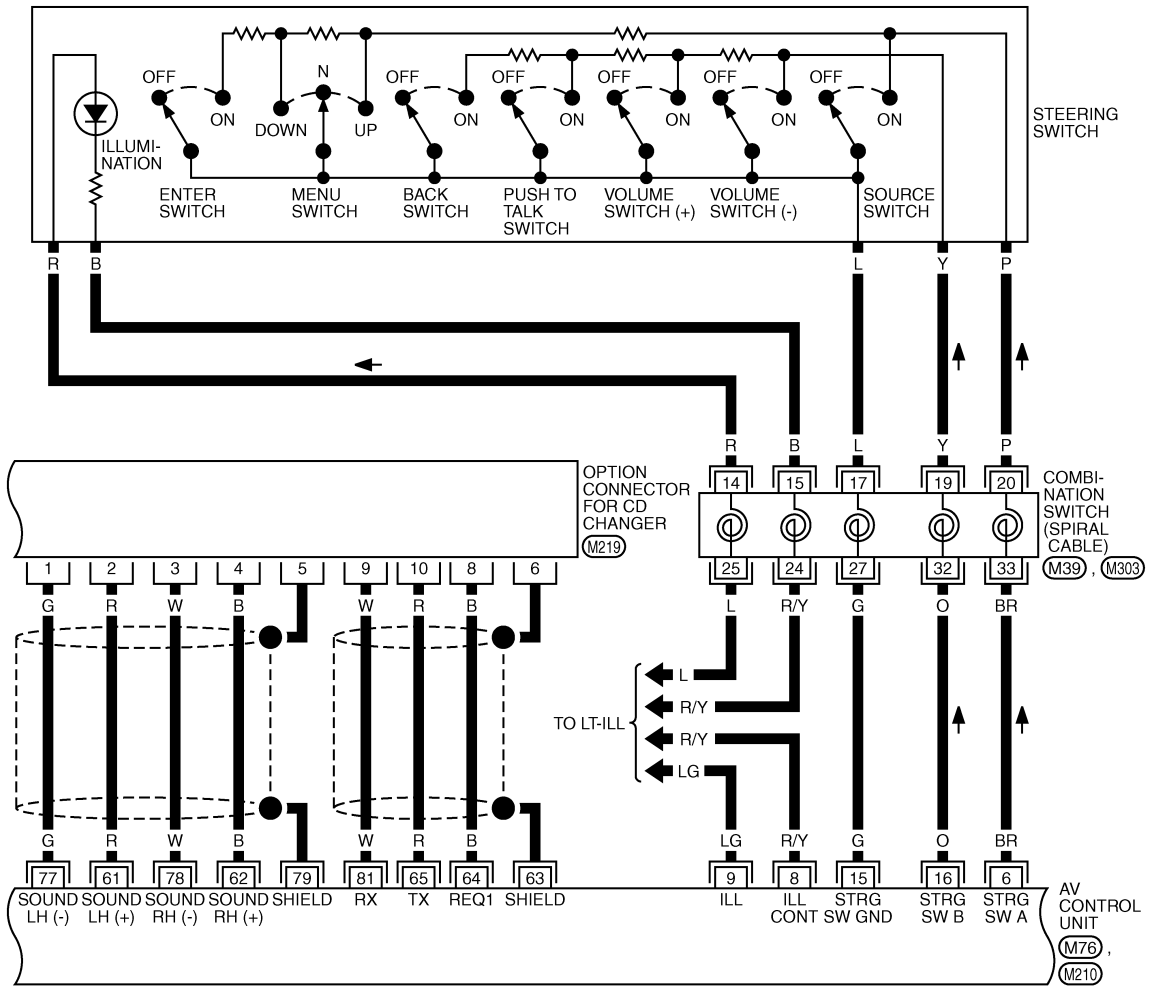
NOTE:

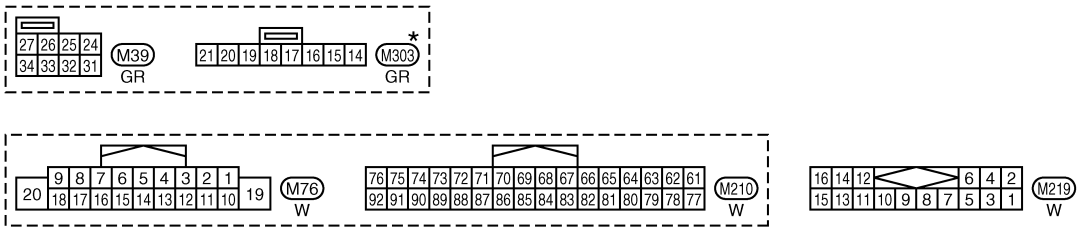
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.





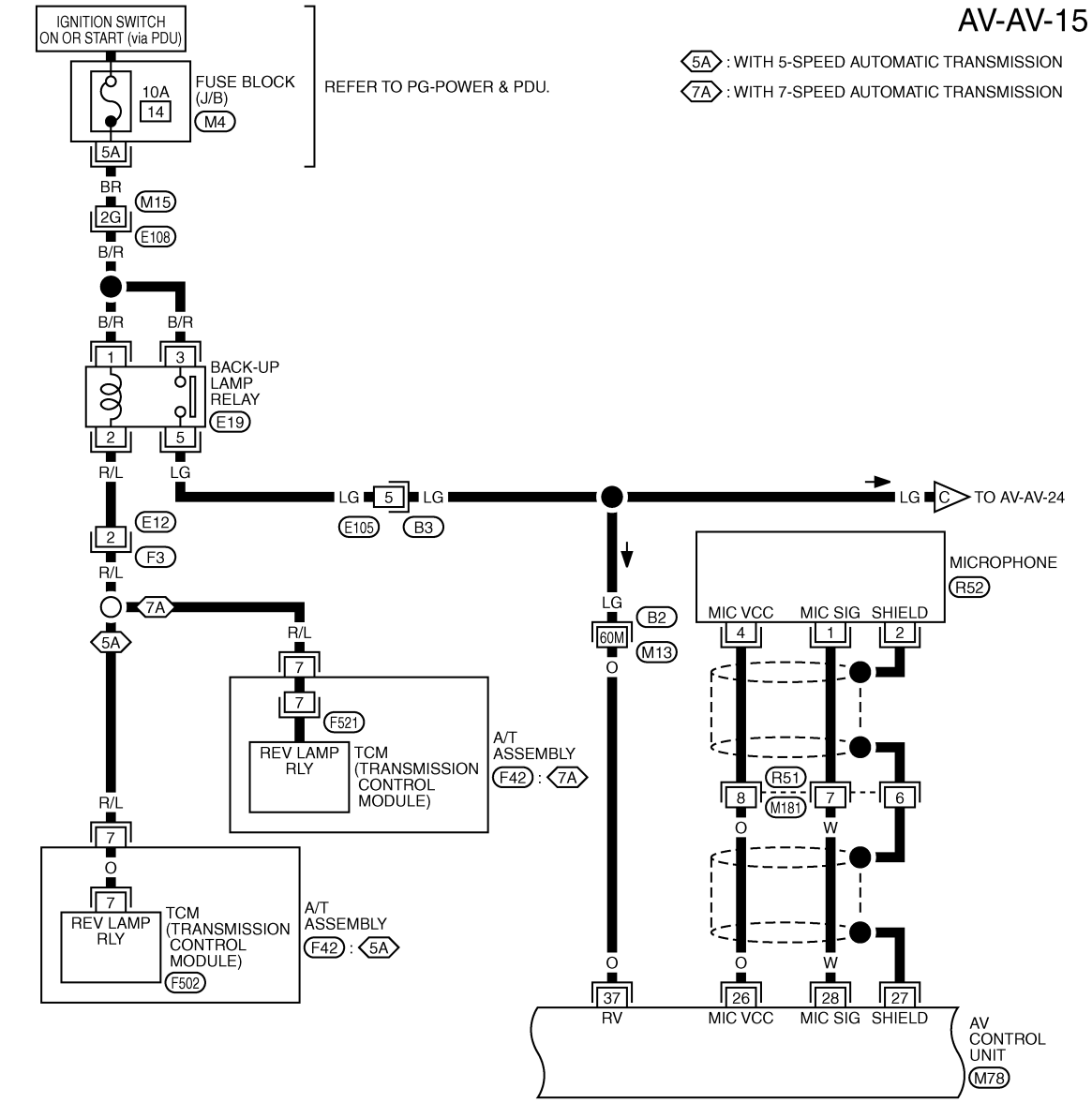
TKWT8273E





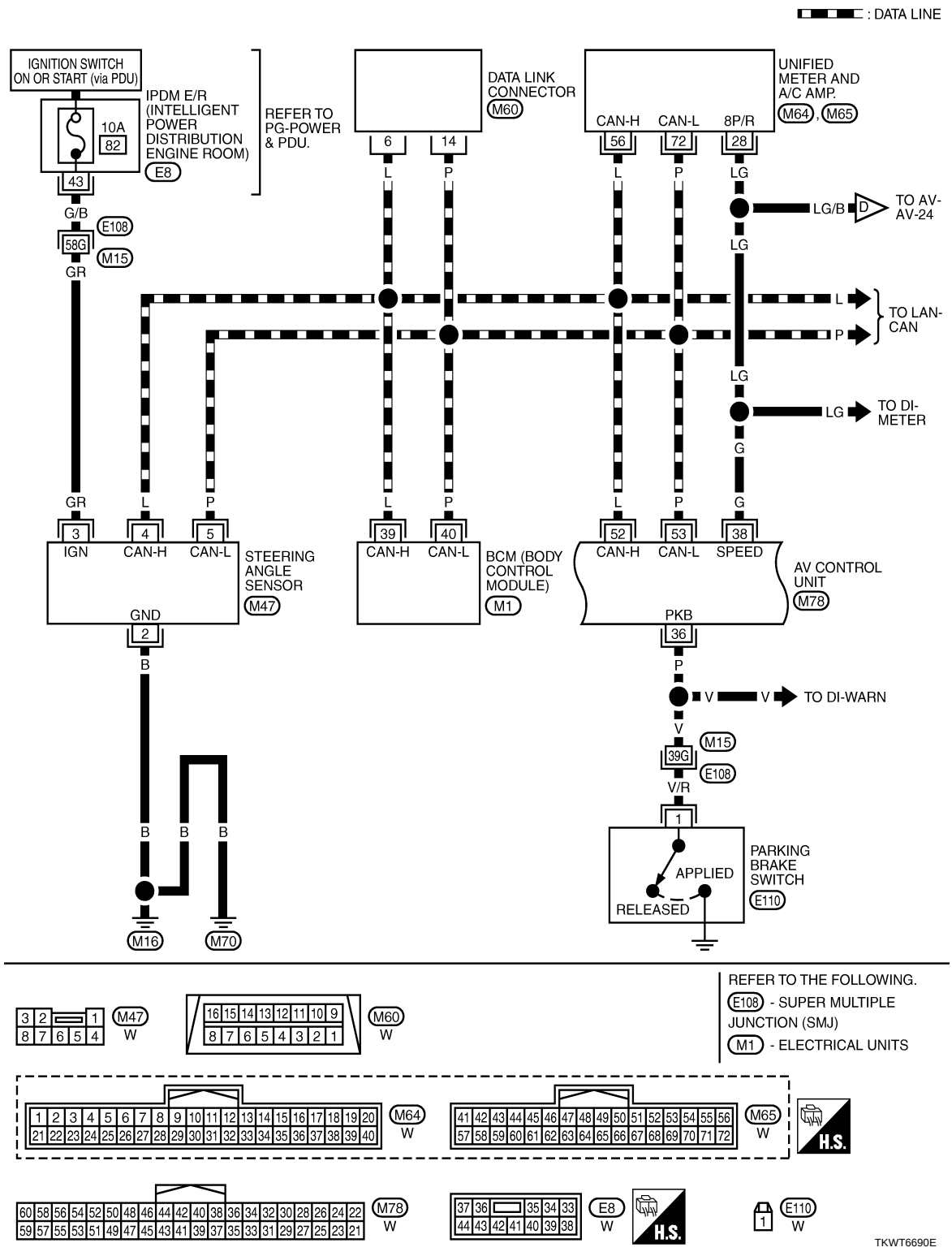
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8274E

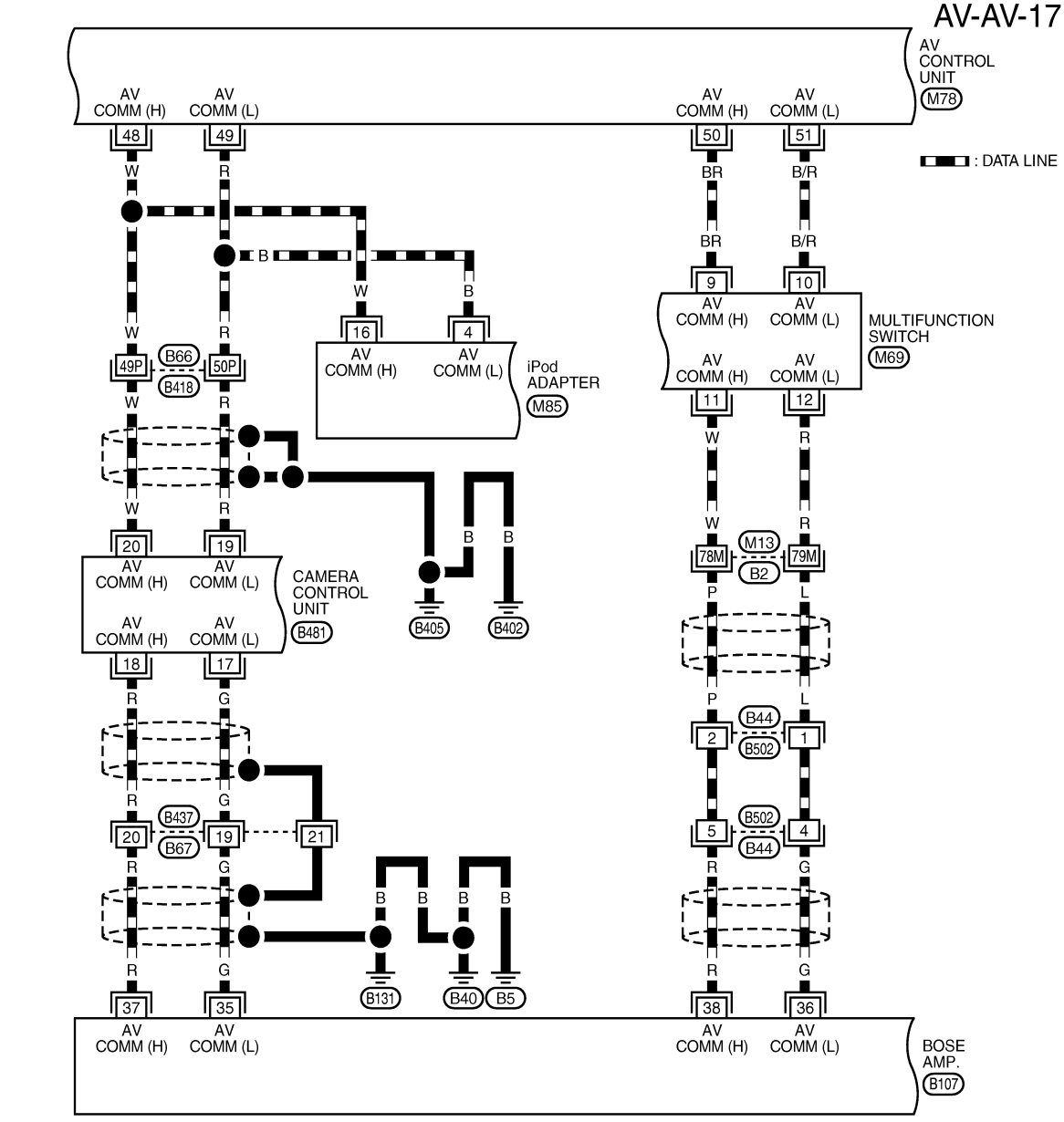

AV-AV-15
5A : WITH 5-SPEED AUTOMATIC TRANSMISSION
7A : WITH 7-SPEED AUTOMATIC TRANSMISSION
IGNITION SWITCH ON OR START (via PDU)
FUSE BLOCK (J/B) M4
10A 14
5A
REFER TO PG-POWER & PDU.
BR
2G M15
E108
B/R
B/R B/R
1 3
BACK-UP LAMP RELAY E19
2 5
R/L LG
LG 5 LG
E105 B3
LG C TO AV-AV-24
2 E12
F3
R/L
7A
5A
R/L
7
7 F521
REV LAMP RLY
TCM (TRANSMISSION CONTROL MODULE)
A/T ASSEMBLY F42 : 7A
R/L
7
O
7
REV LAMP RLY
TCM (TRANSMISSION CONTROL MODULE) F502
A/T ASSEMBLY F42 : 5A
LG B2
60M M13
O
MICROPHONE R52
MIC VCC MIC SIG SHIELD
4 1 2
R51
8 M181 7 6
O W
O W
37 26 28 27
RV MIC VCC MIC SIG SHIELD
AV CONTROL UNIT M78
M78 W
E19 L
F3 B
F42 G
F502 GR
F521 G
B3 W
R51 W
R52 W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

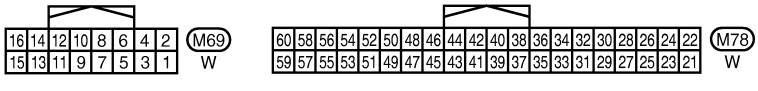
TKWT8275E

AV-AV-16

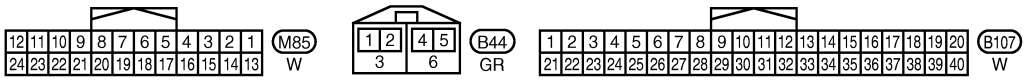

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
G/B
E108
58G
M15
GR
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
UNIFIED METER AND A/C AMP. M64, M65
CAN-H
CAN-L
8P/R
56
72
28
L
P
LG
LG/B
D
TO AV-AV-24
TO LAN-CAN
TO DI-METER
G
GR
L
P
3
4
5
IGN
CAN-H
CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
39
40
BCM (BODY CONTROL MODULE) M1
52
53
38
SPEED
AV CONTROL UNIT M78
PKB
36
V
TO DI-WARN
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
M16
M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47
W
M60
W
M64
W
M65
W
H.S.
M78
W
E8
W
E110
W
TKWT6690E

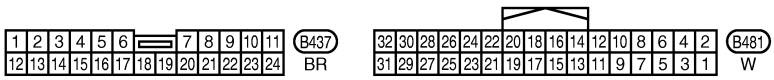
AV-AV-17





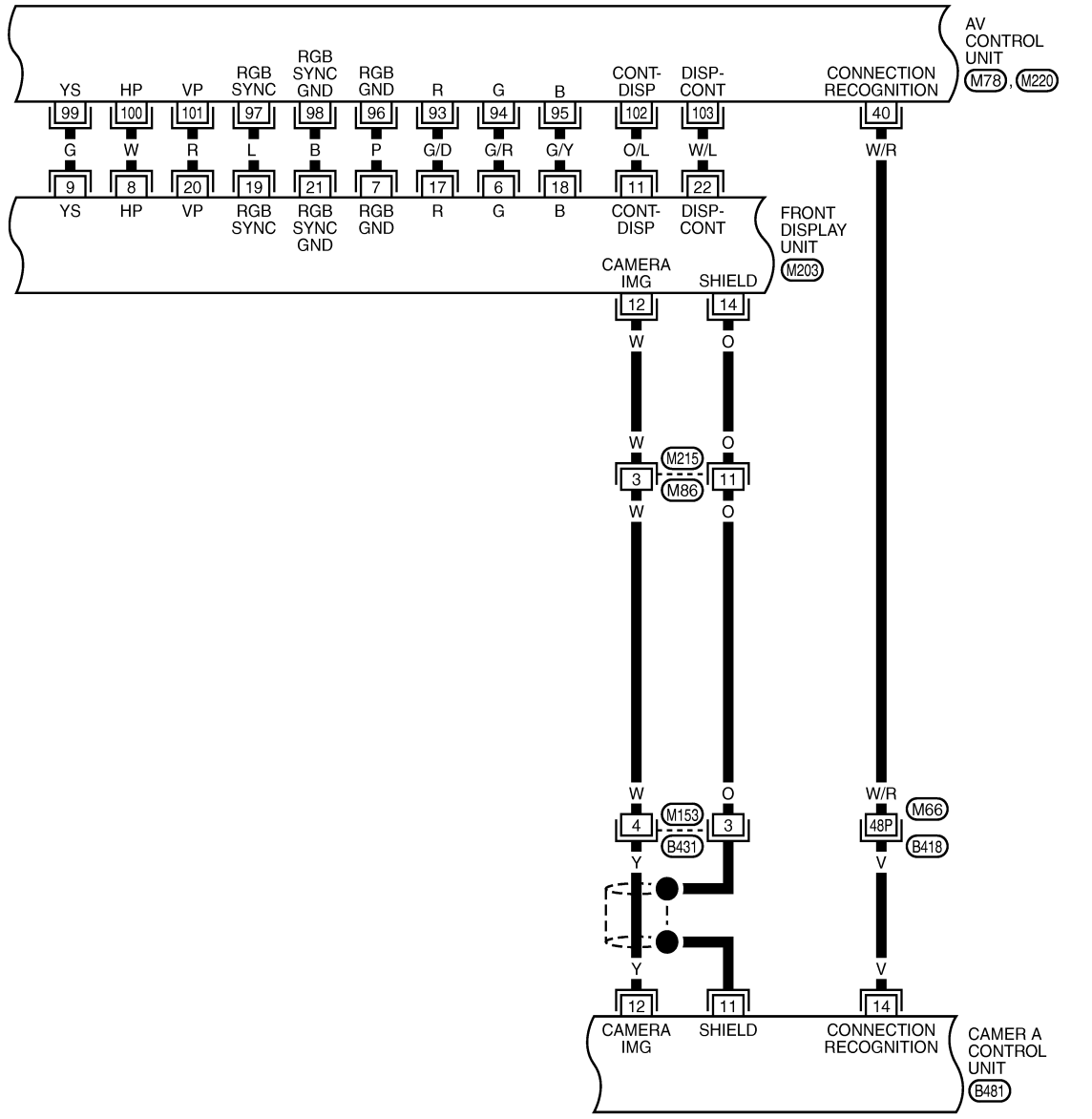
REFER TO THE FOLLOWING.
B2 , B418 - SUPER MULTIPLE JUNCTION (SMJ)

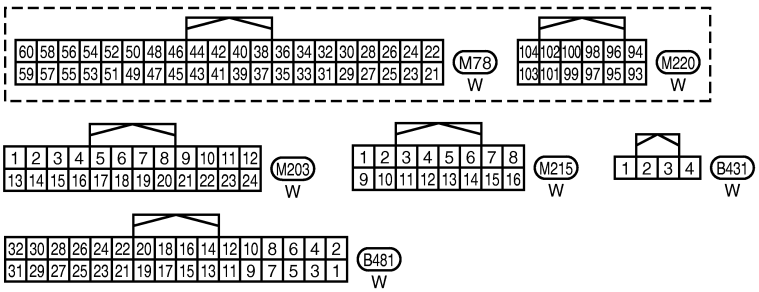




TKWT6691E

AV-AV-18

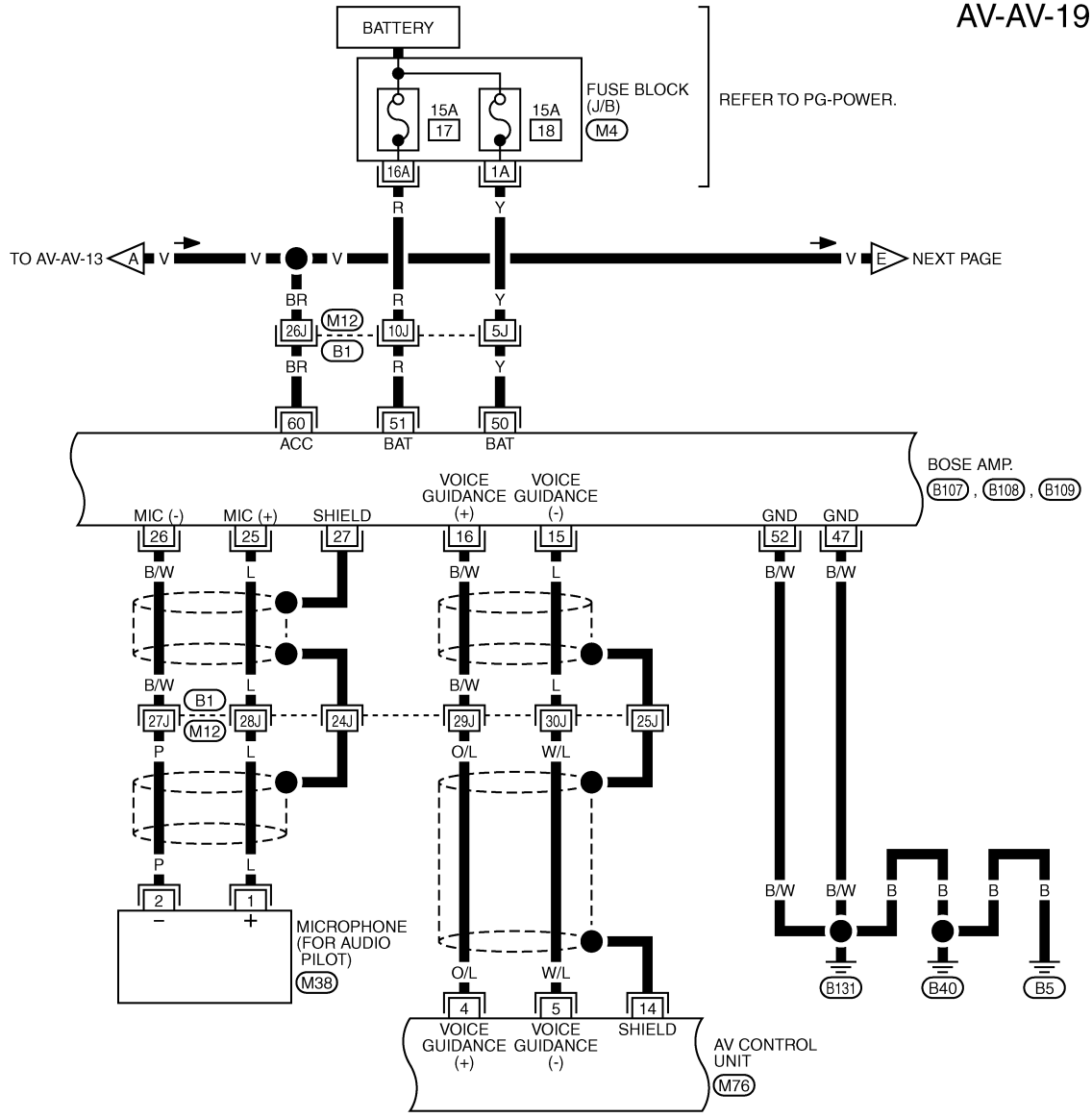


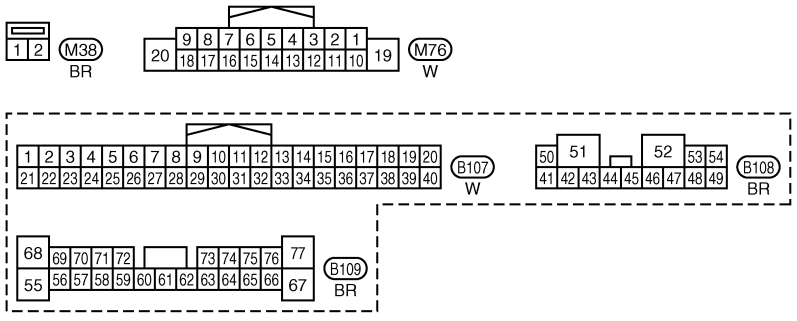


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6692E

AV-AV-19

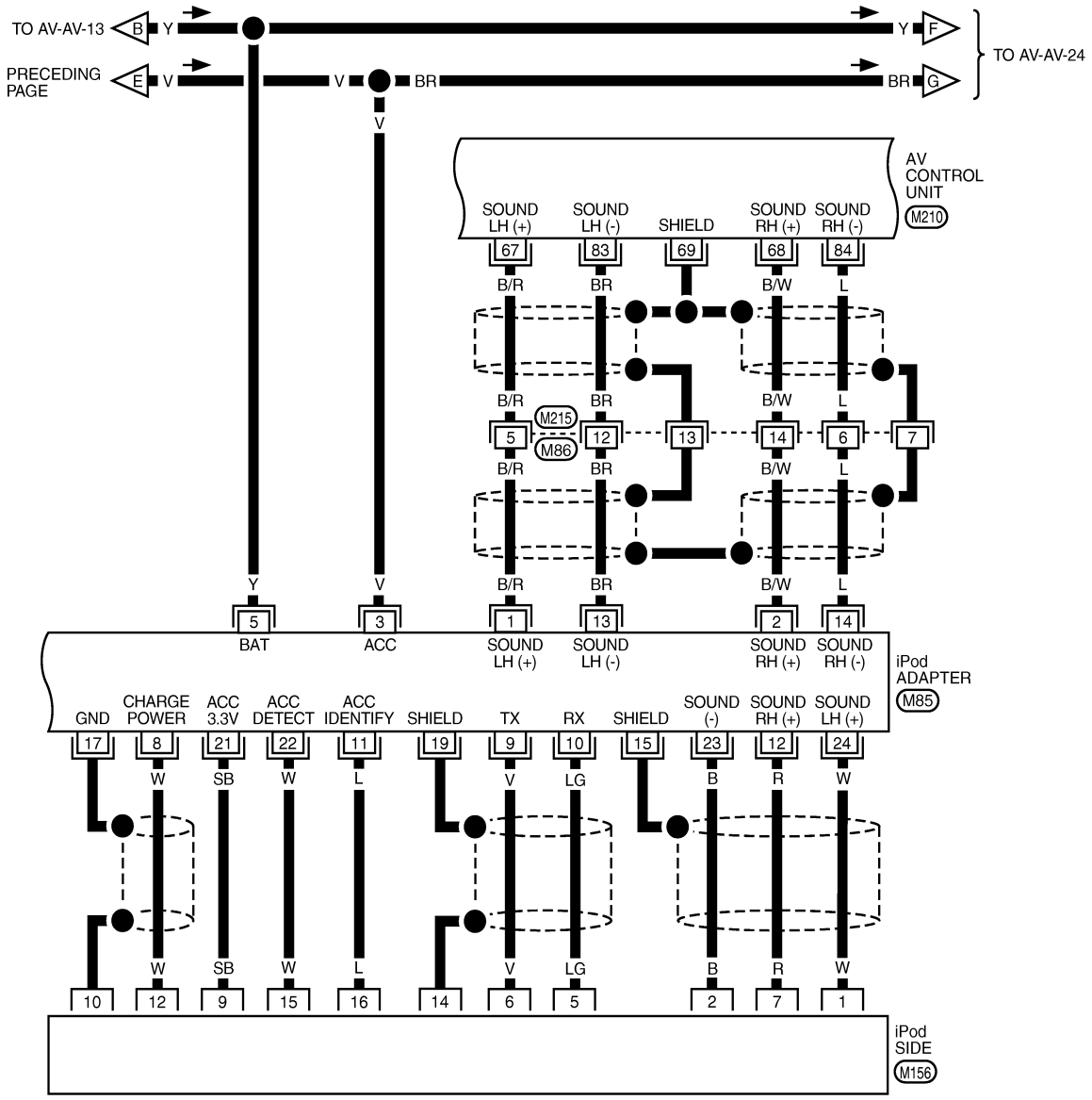




REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

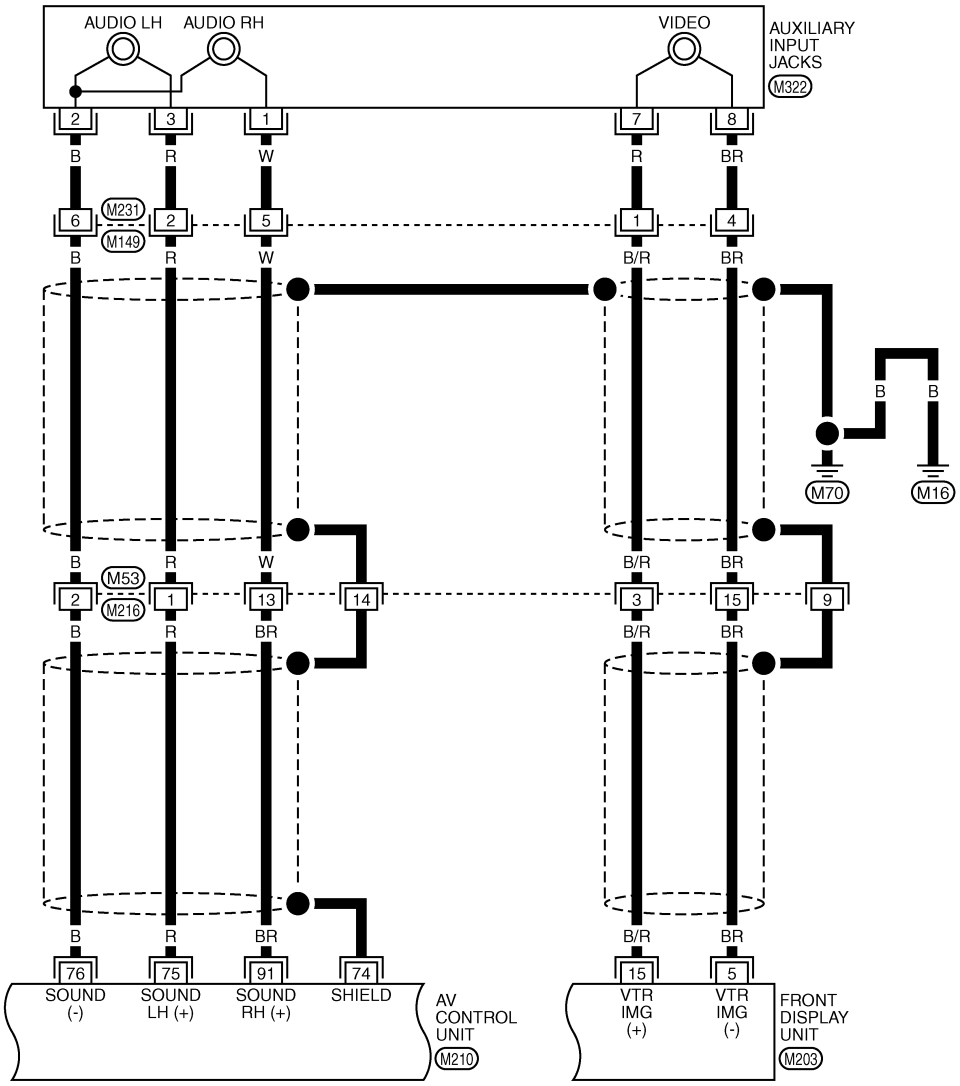
TKWT8276E

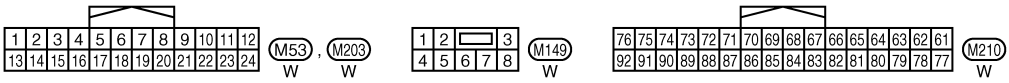
AV-AV-20

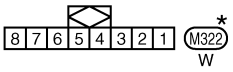


TKWT6695E

AV-AV-21



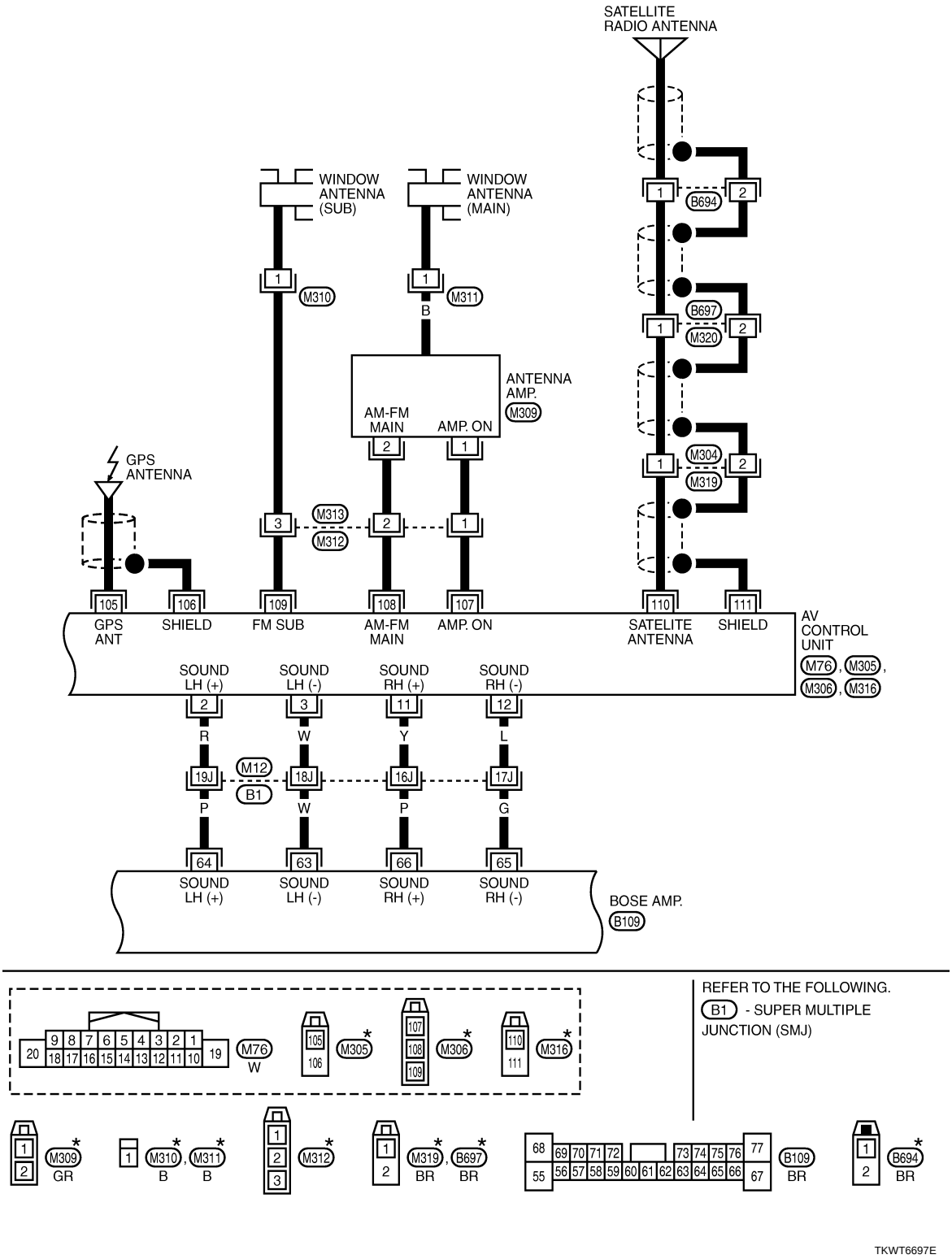




*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

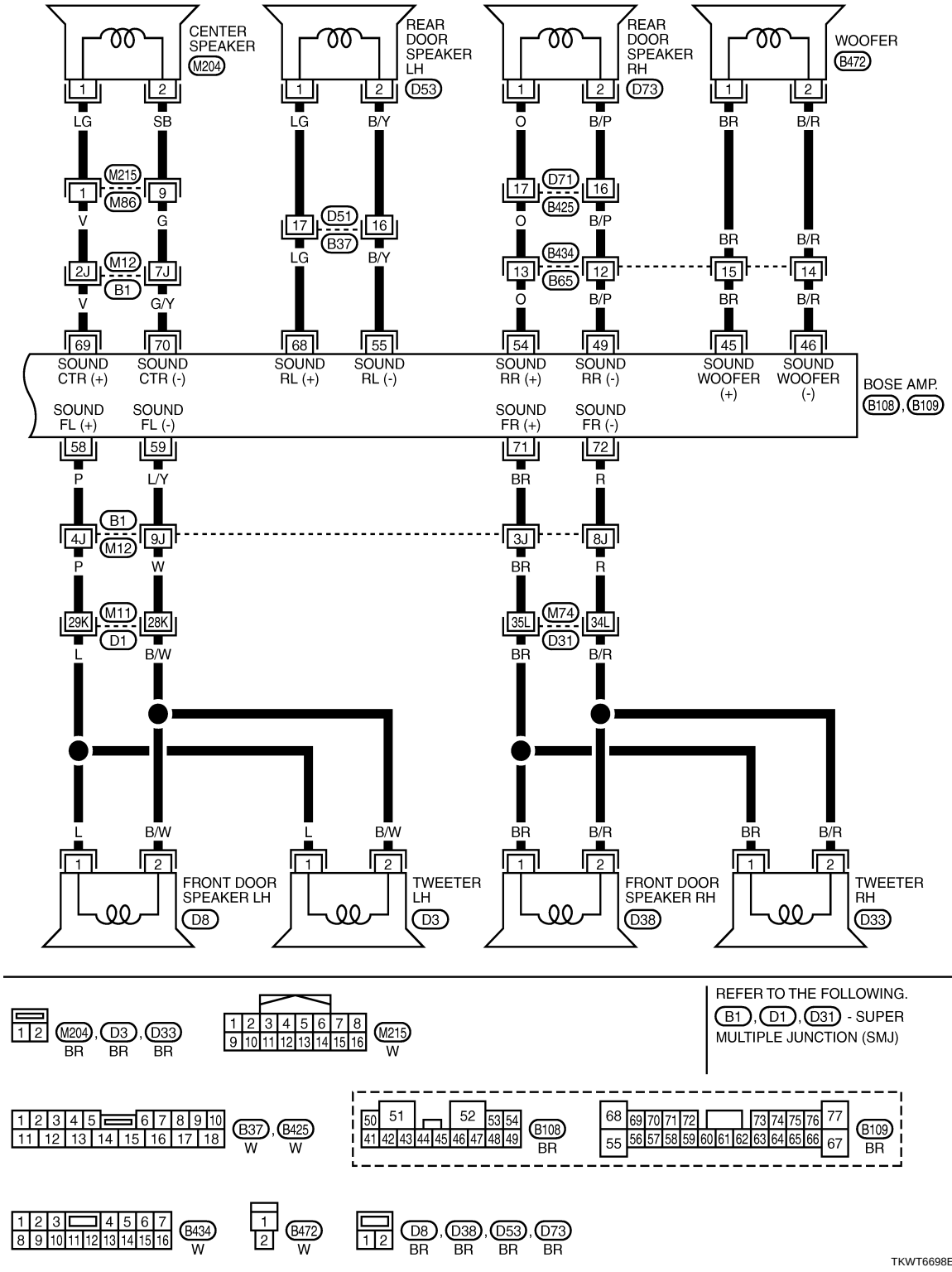
TKWT8277E

AV-AV-22

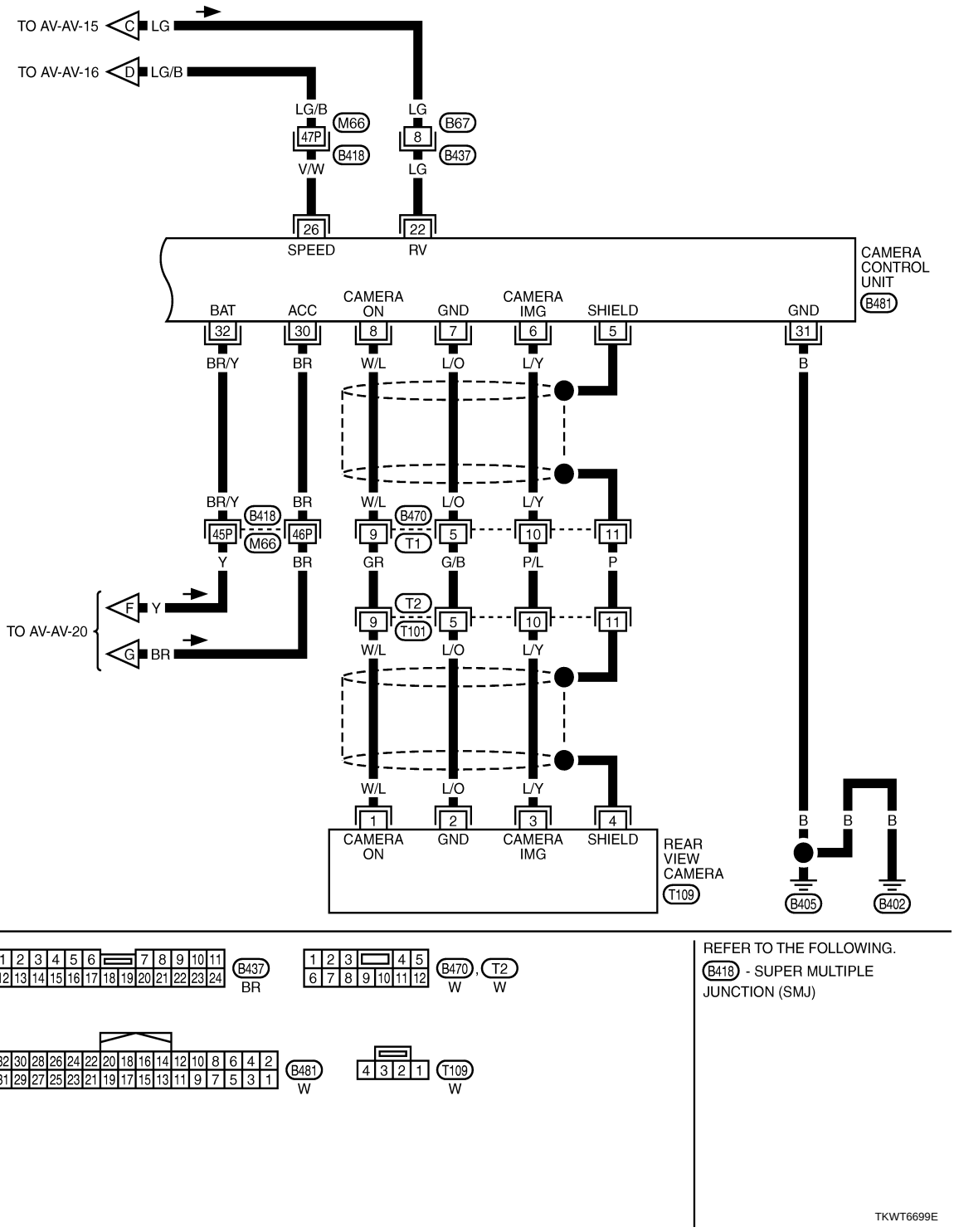


TKWT6697E

AV-AV-23


CENTER SPEAKER M204
REAR DOOR SPEAKER LH D53
REAR DOOR SPEAKER RH D73
WOOFER B472
SOUND CTR (+)
SOUND CTR (-)
SOUND RL (+)
SOUND RL (-)
SOUND RR (+)
SOUND RR (-)
SOUND WOOFER (+)
SOUND WOOFER (-)
SOUND FL (+)
SOUND FL (-)
SOUND FR (+)
SOUND FR (-)
BOSE AMP. B108, B109
FRONT DOOR SPEAKER LH D8
TWEETER LH D3
FRONT DOOR SPEAKER RH D38
TWEETER RH D33
REFER TO THE FOLLOWING.
B1, D1, D31 - SUPER MULTIPLE JUNCTION (SMJ)
M204, D3, D33
M215
B37, B425
B108
B109
B434
B472
D8, D38, D53, D73
TKWT6698E

AV-AV-24



REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

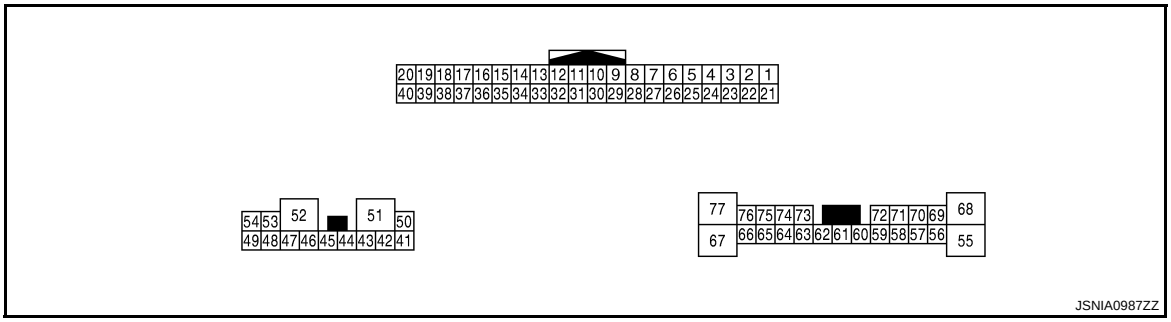
TKWT6699E

BOSE SURROUND AUDIO 5.1CH SYSTEM

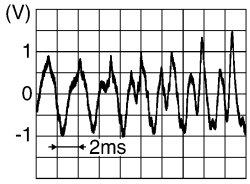
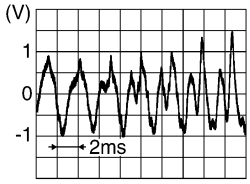
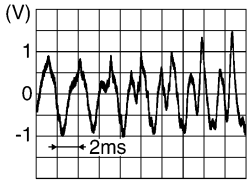
BOSE SURROUND AUDIO 5.1CH SYSTEM : Reference Value

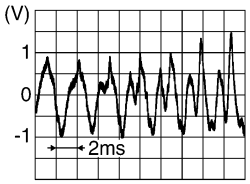
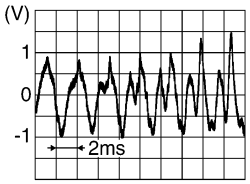
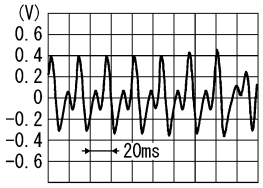
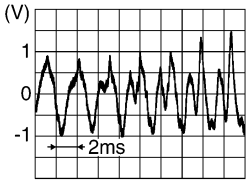
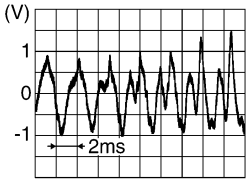
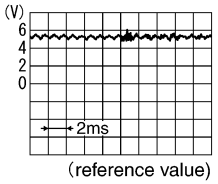
INFOID:0000000004155815

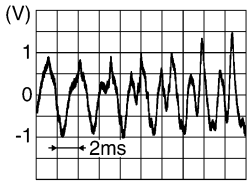
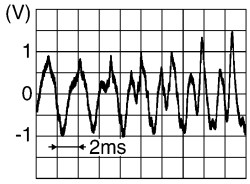
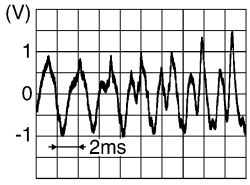
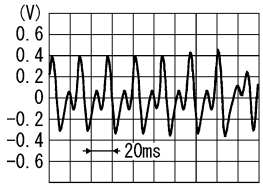
TERMINAL LAYOUT

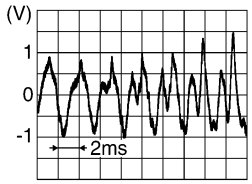
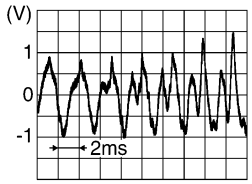
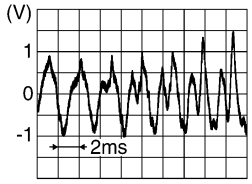
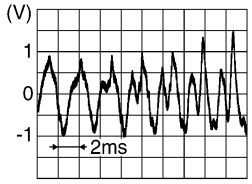
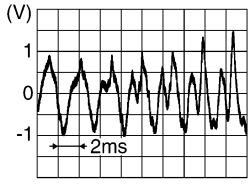
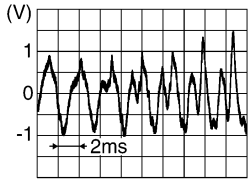


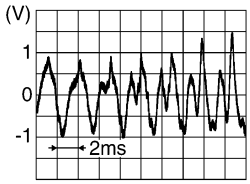
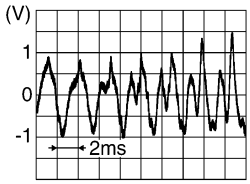
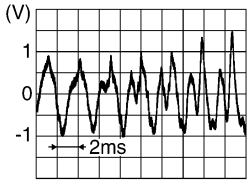
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
14 (G)	—	AV communication signal (L)	Input/ Output	—	—	—
15 (G)	—	AV communication signal (L)	Input/ Output	—	—	—
16 (BR)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
23 (L/R)	3 (R/L)	DVD surround signal front LH	Input	Ignition switch ON	When the DVD player is played.	 SKIB3609E
24 (B/Y)	4 (B/R)	DVD surround signal front RH	Input	Ignition switch ON	When the DVD player is played.	 SKIB3609E
25 (B)	5 (LG)	DVD surround signal rear LH	Input	Ignition switch ON	When the DVD player is played.	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
26 (W)	6 (L)	DVD surround signal rear RH	Input	Ignition switch ON	When the DVD player is played.	 SKIB3609E
27 (LG)	7 (R)	DVD surround signal center	Input	Ignition switch ON	When the DVD player is played.	 SKIB3609E
28 (BR)	8 (R/B)	DVD surround signal woofer	Input	Ignition switch ON	When the DVD player is played.	 PKIB6116J
29 (R/L)	9 (W)	Sound signal LH	Input	Ignition switch ON	Audio sound output. (except DVD mode)	 SKIB3609E
30 (P)	10 (L)	Sound signal RH	Input	Ignition switch ON	Audio sound output. (except DVD mode)	 SKIB3609E
31 (L)	11 (B/W)	MIC. signal (for AudioPilot®)	Input	Ignition switch ON	When inputting noise.	 (reference value) PKIA2104E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
32 (B/W)	12 (L)	Voice guidance signal	Input	Ignition switch ON	When inputting voice guidance.	 SKIB3609E
33	—	Shield	—	—	—	—
34 (R)	—	AV communication signal (H)	Input/ Output	—	—	—
35 (R)	—	AV communication signal (H)	Input/ Output	—	—	—
36	—	Shield	—	—	—	—
41 (L)	42 (B/W)	Sound signal front door speaker LH	Output	Ignition switch ON	Sound output.	 SKIB3609E
43 (BR)	44 (B/R)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
45 (BR)	46 (B/R)	Sound signal woofer	Output	Ignition switch ON	Sound output.	 PKIB6116J
47 (B/W)	Ground	Ground	—	Ignition switch ON	—	0 V
50 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
51 (R)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
52 (B/W)	Ground	Ground	—	Ignition switch ON	—	0 V

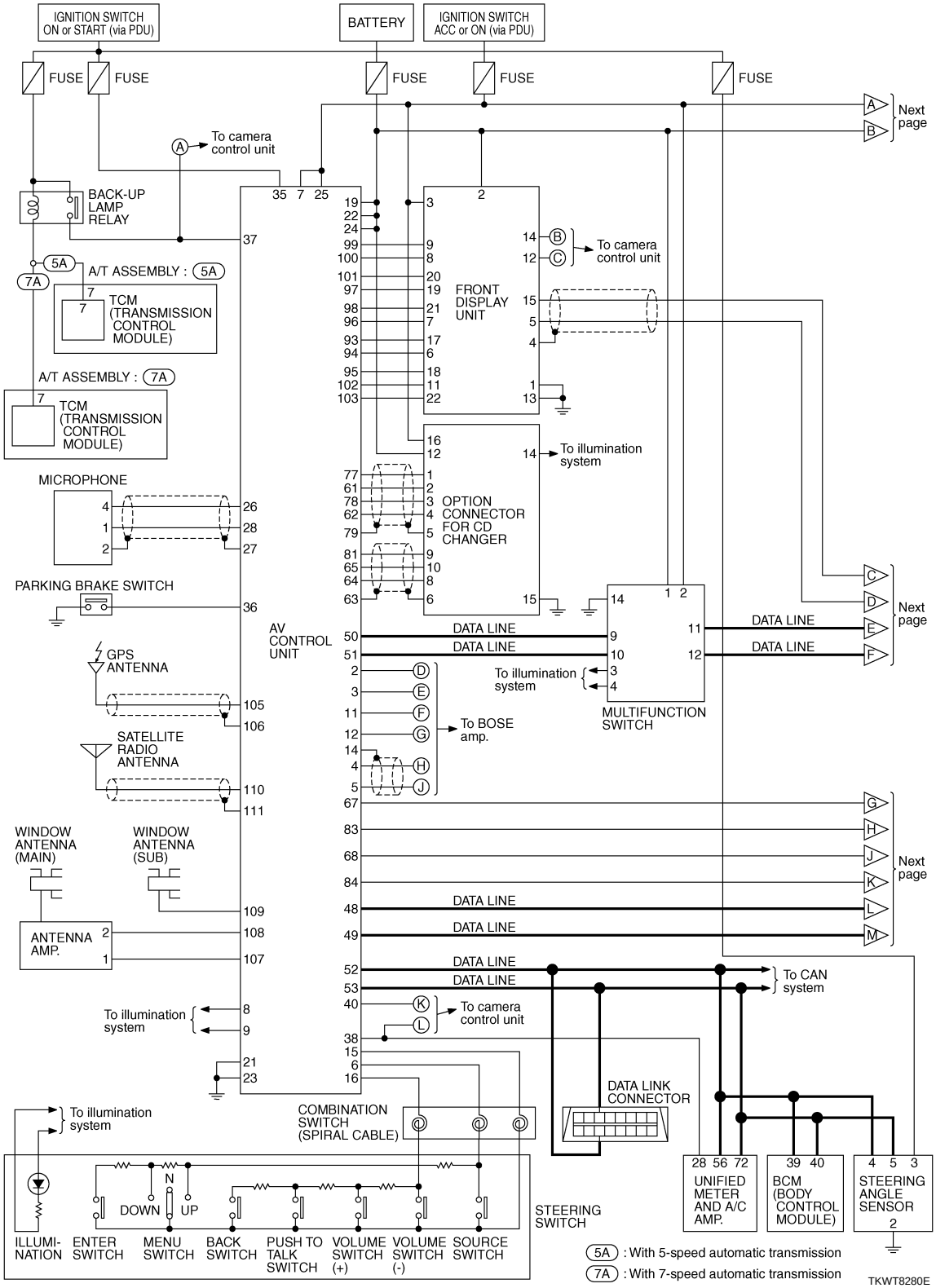
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
54 (LG)	49 (B/Y)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output.	 SKIB3609E
56 (B/W)	69 (L)	Sound signal passenger seat speaker LH	Output	Ignition switch ON	Sound output.	 SKIB3609E
57 (O/B)	58 (W/R)	Sound signal center speaker	Output	Ignition switch ON	Sound output.	 SKIB3609E
59 (B)	72 (W)	Sound signal rear surround speaker LH	Output	Ignition switch ON	Sound output.	 SKIB3609E
62 (G/Y)	73 (GR/R)	Sound signal rear surround speaker RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
63 (B/W)	74 (L)	Sound signal driver seat speaker LH	Output	Ignition switch ON	Sound output.	 SKIB3609E

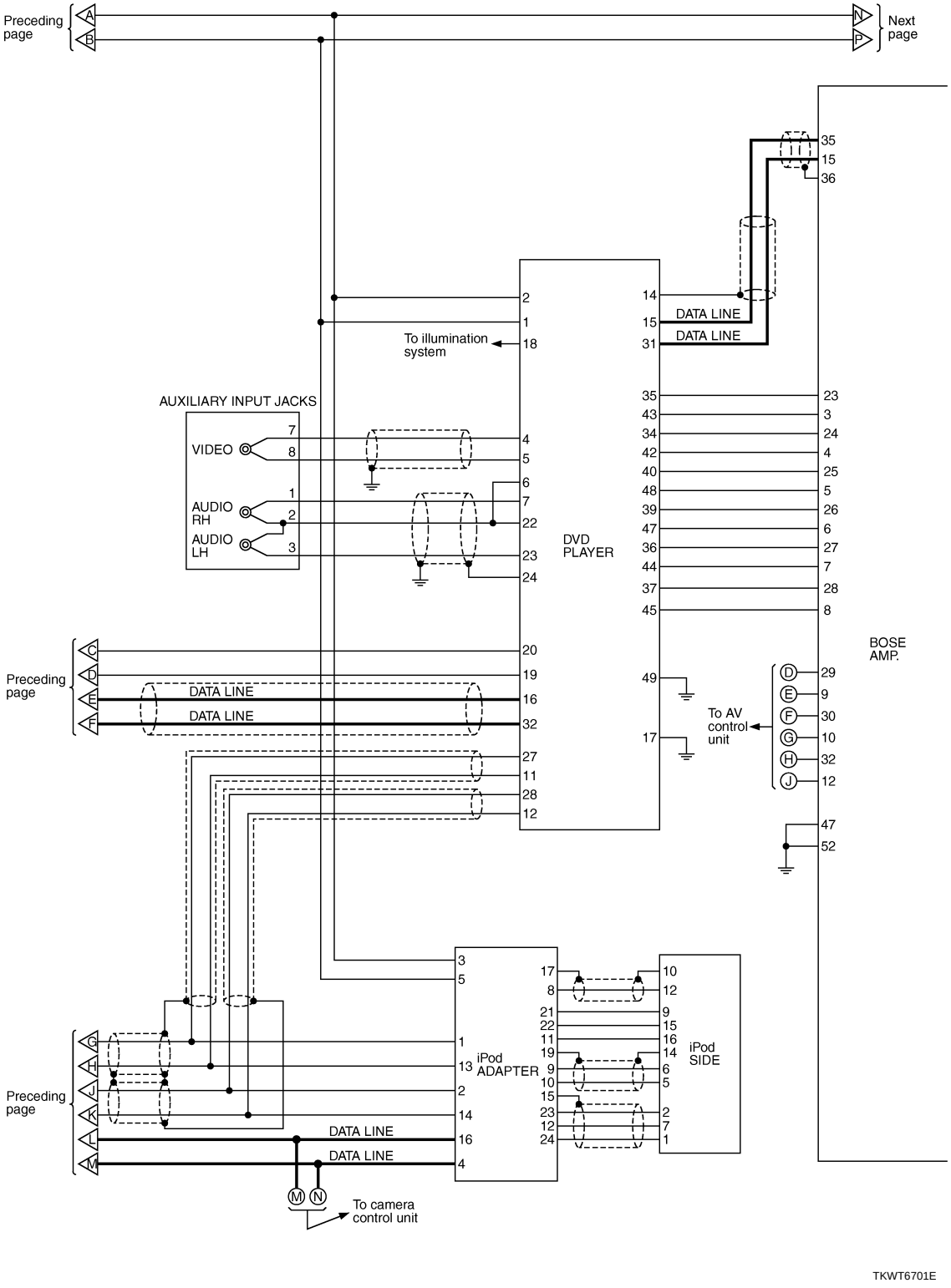
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
64 (B/R)	75 (BR)	Sound signal driver seat speaker RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
68 (O)	55 (B/P)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
71 (Y)	70 (BR)	Sound signal passenger seat speaker RH	Output	Ignition switch ON	Sound output.	 SKIB3609E

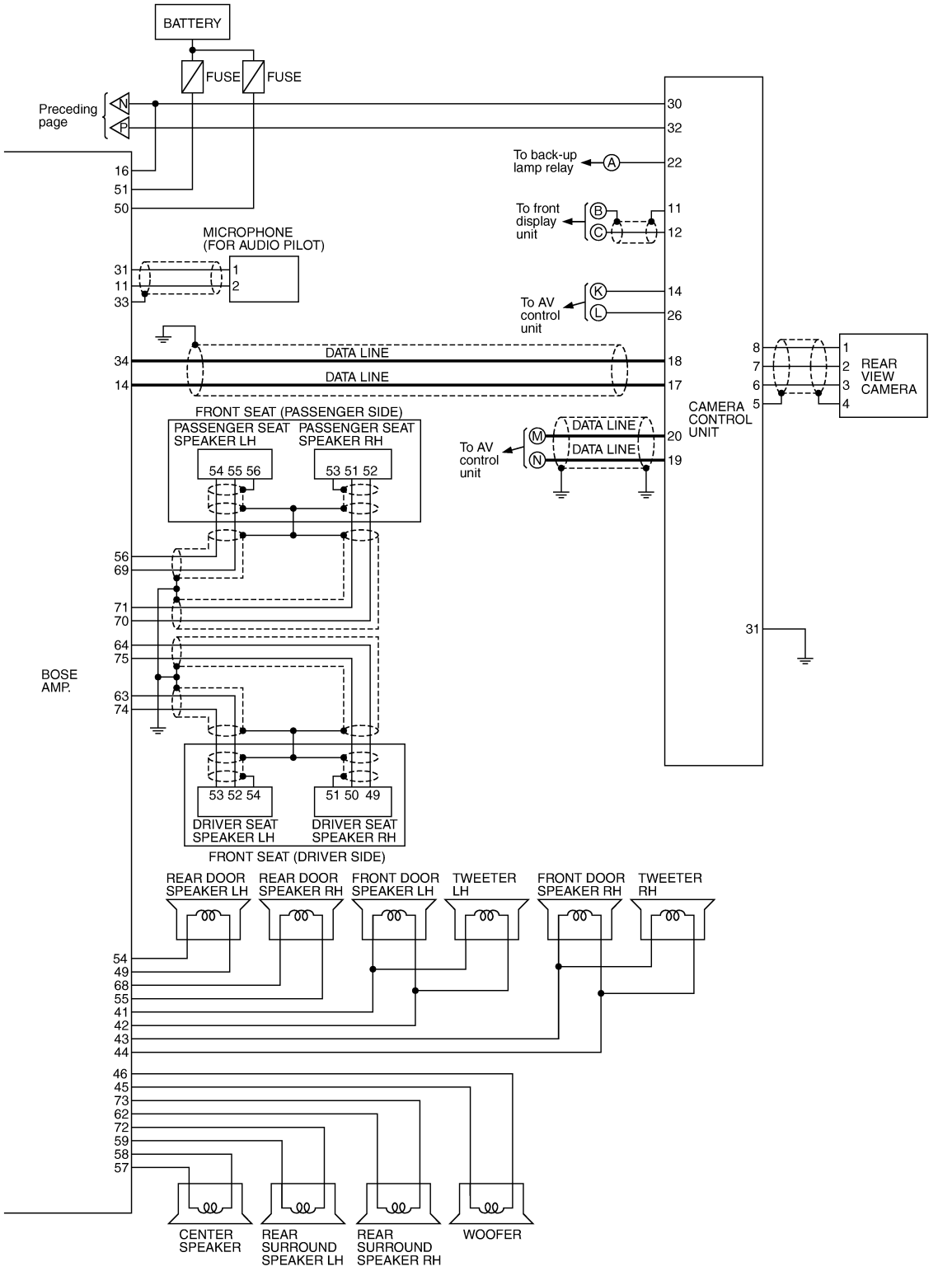
BOSE SURROUND AUDIO 5.1CH SYSTEM : Schematic - BOSE Surround Audio

5.1ch System -

INFOID:0000000004380458




Preceding page
A
B
Next page
N
P
AUXILIARY INPUT JACKS
VIDEO
AUDIO RH
AUDIO LH
DVD PLAYER
To illumination system
DATA LINE
DATA LINE
BOSE AMP.
To AV control unit
iPod ADAPTER
iPod SIDE
DATA LINE
DATA LINE
To camera control unit
TKWT6701E



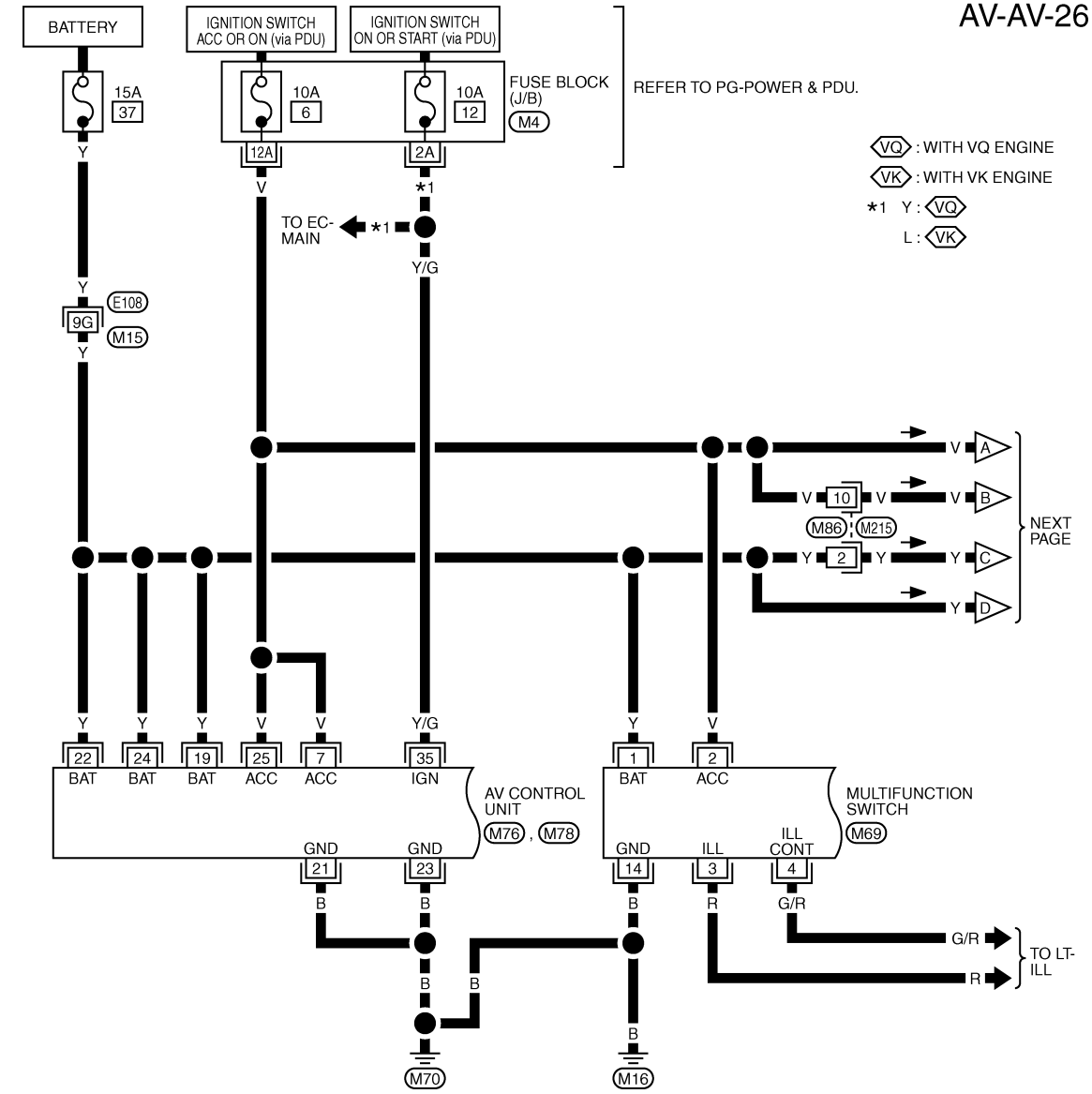
TKWT6702E

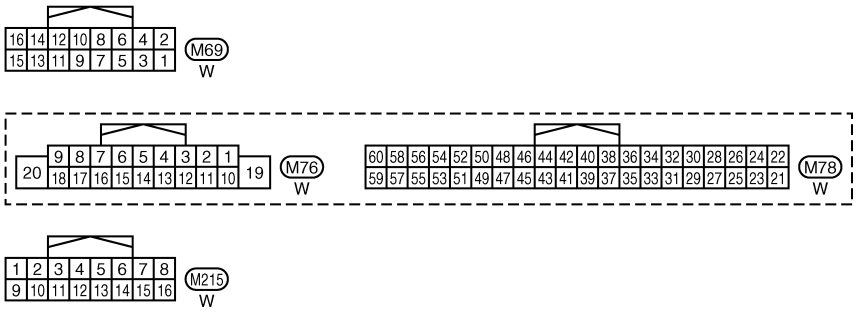
BOSE SURROUND AUDIO 5.1CH SYSTEM : Wiring Diagram - AV - / BOSE Surround Audio 5.1ch System

INFOID:0000000004380459

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

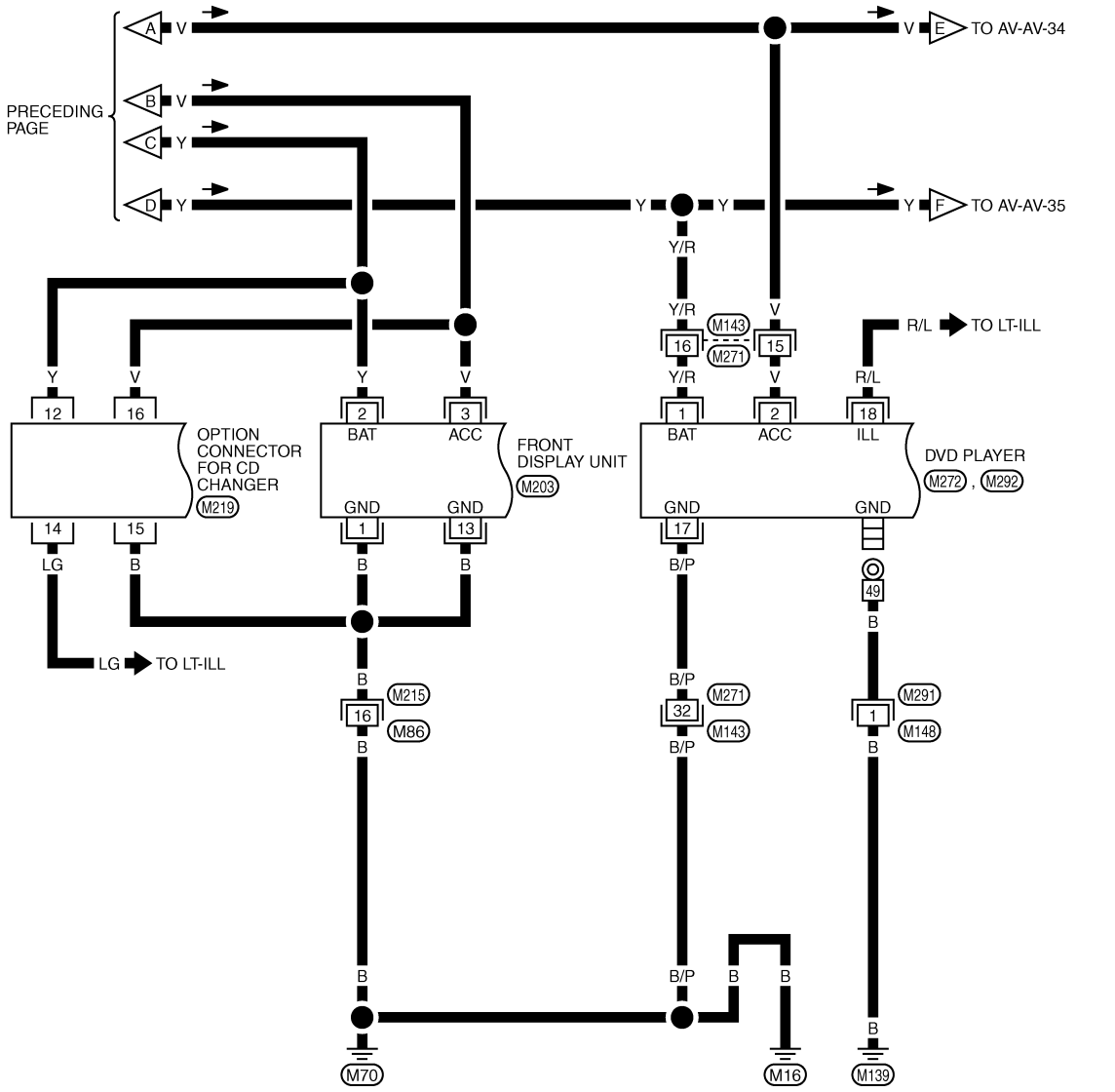


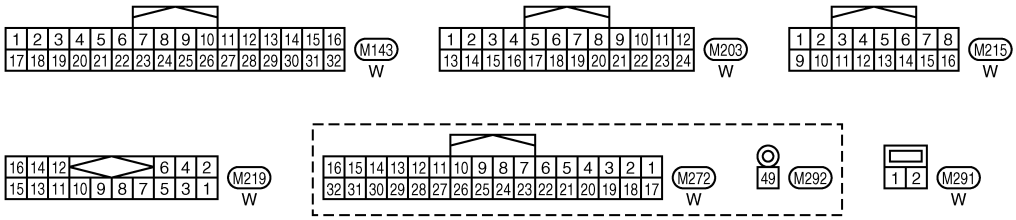


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8281E

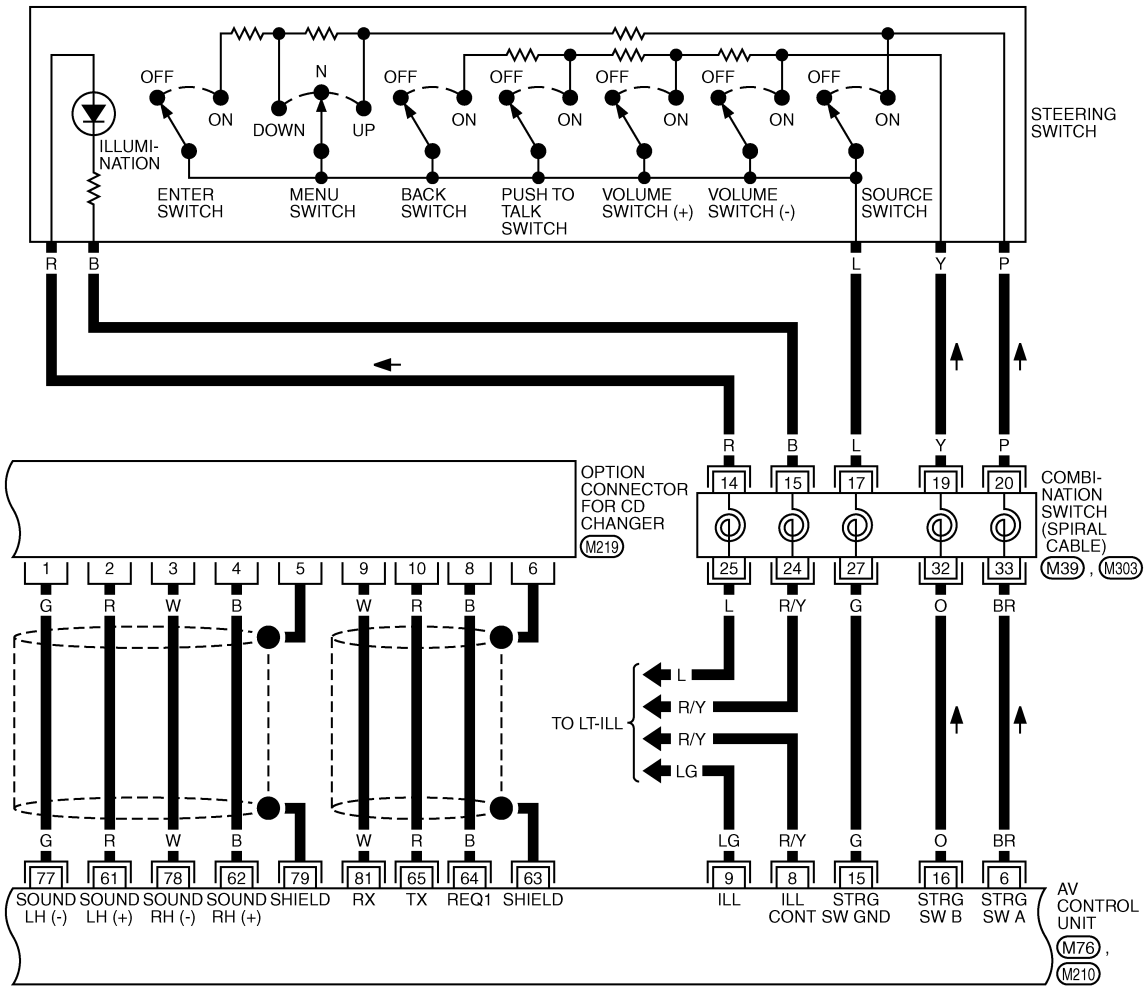
AV-AV-27

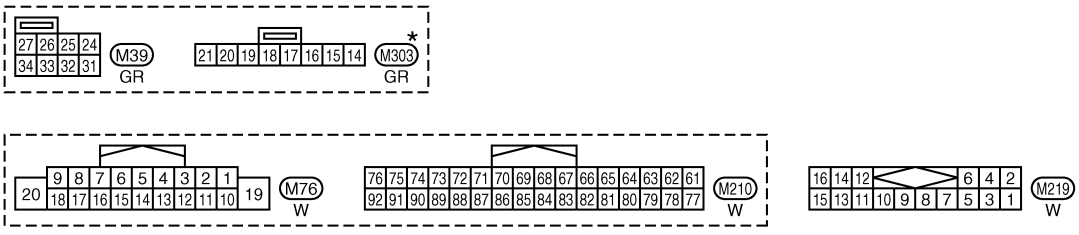




TKWT8282E

AV-AV-28

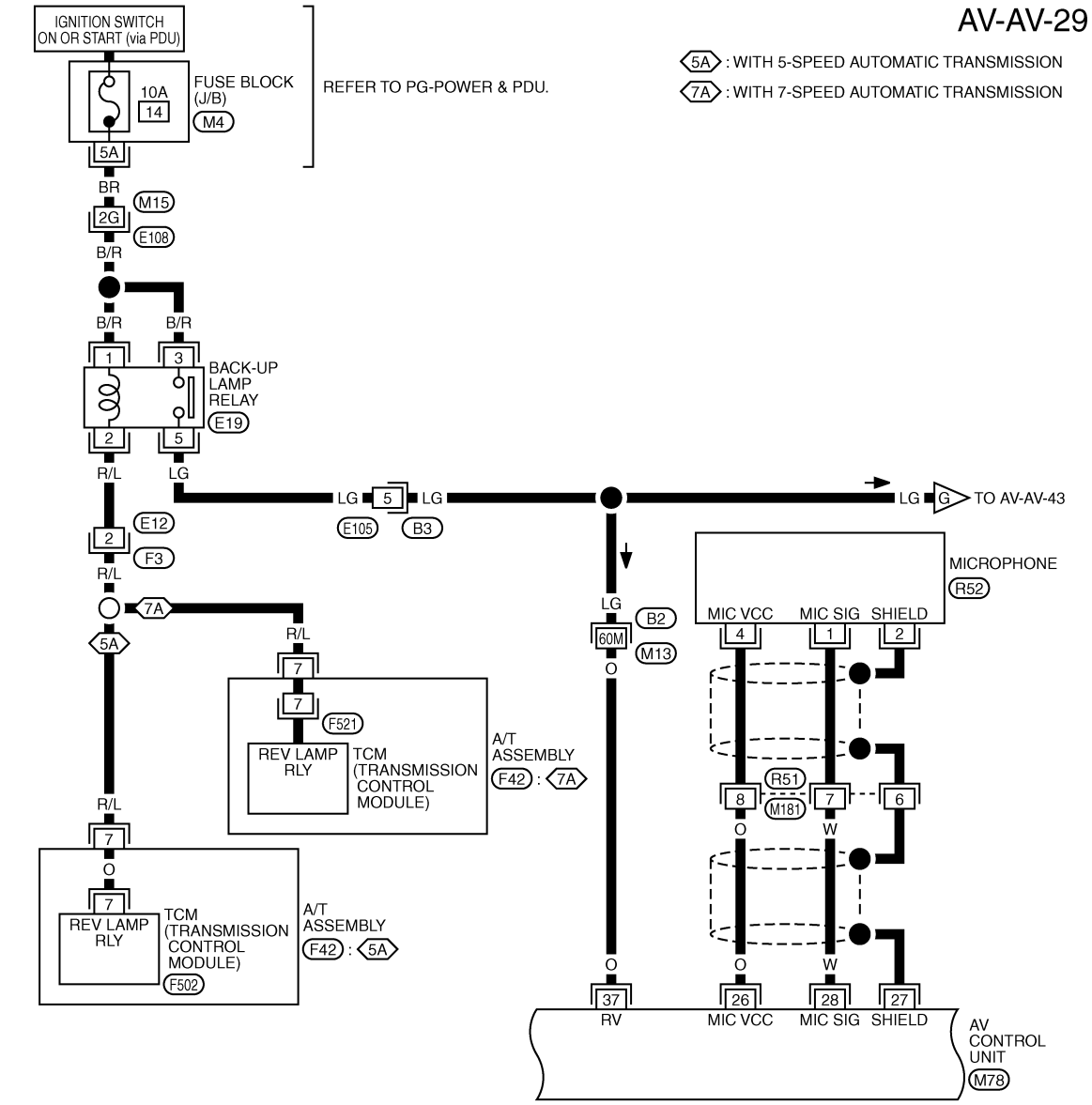


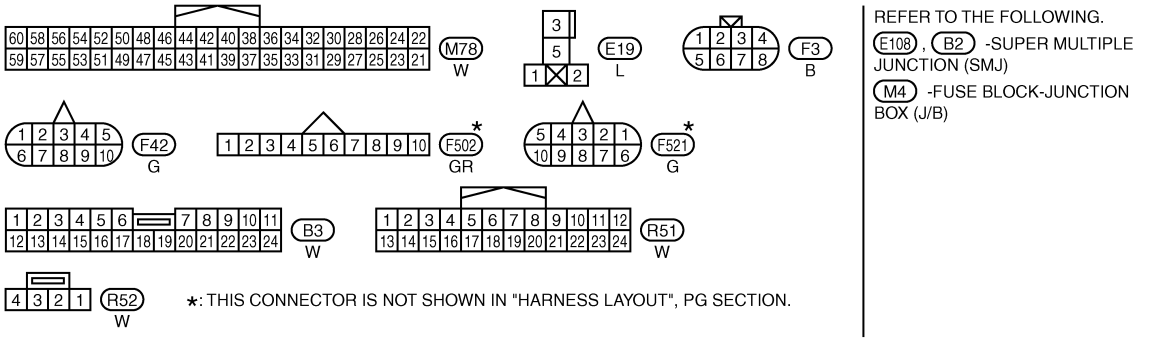


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8283E

AV-AV-29

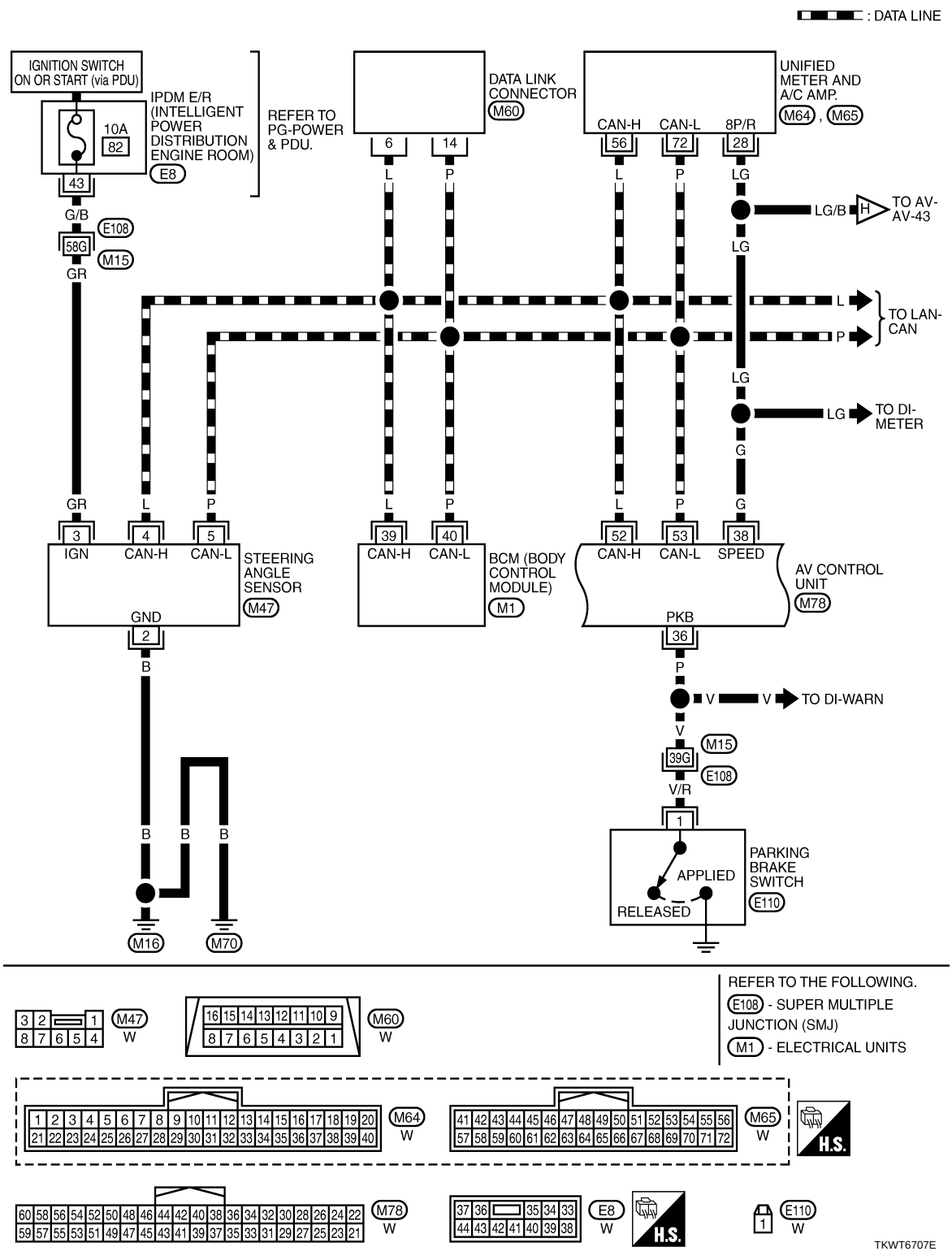




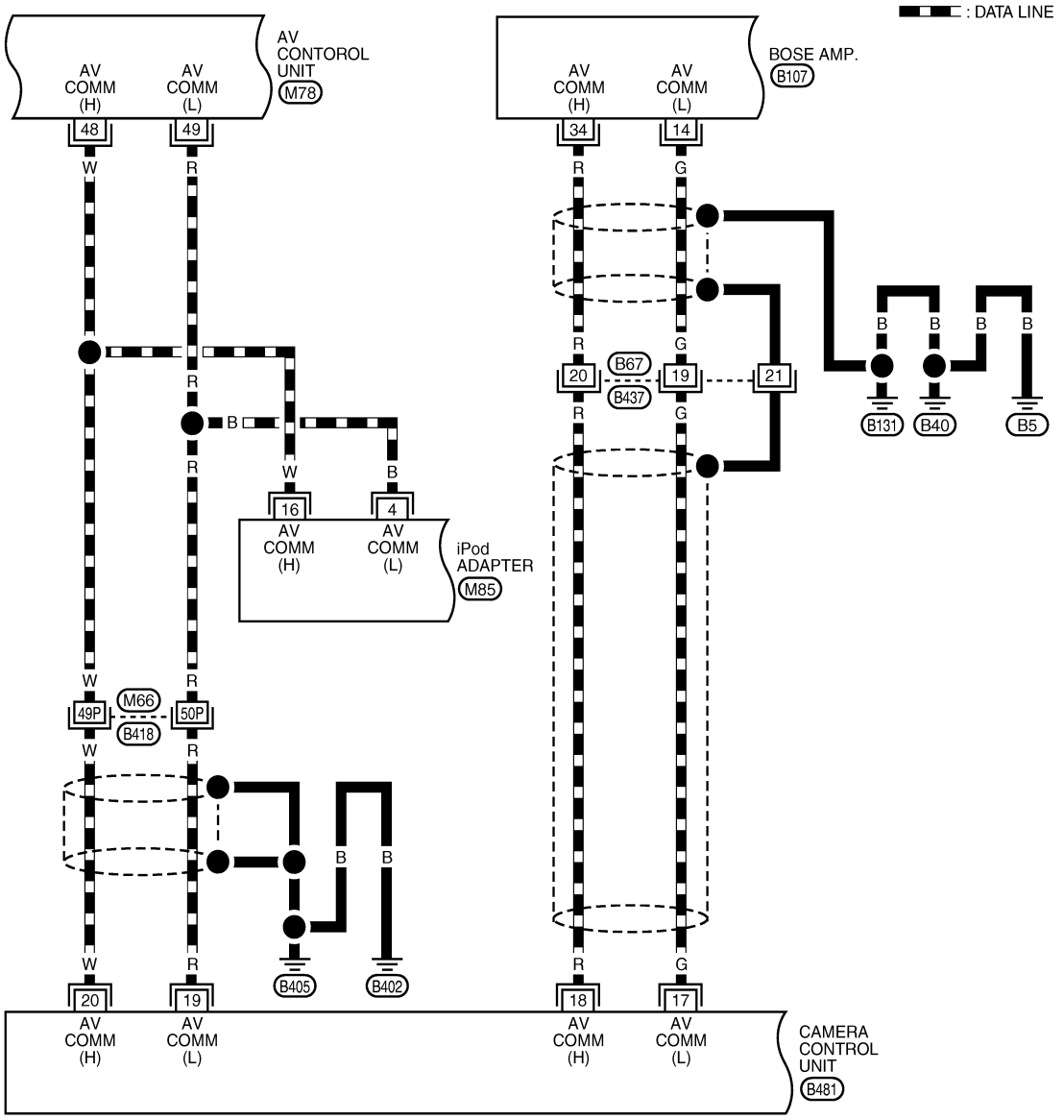
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

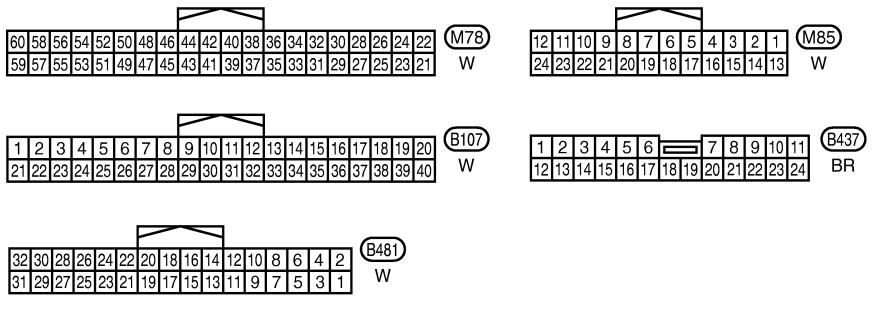
TKWT8284E

AV-AV-30


: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56 72 28
G/B
E108
58G
M15
GR
L P L P LG
LG/B H TO AV-AV-43
LG
L P TO LAN-CAN
LG
LG TO DI-METER
G
GR L P L P L P G
3 4 5 39 40 52 53 38
IGN CAN-H CAN-L
STEERING ANGLE SENSOR M47
GND 2
CAN-H CAN-L
BCM (BODY CONTROL MODULE) M1
CAN-H CAN-L SPEED
AV CONTROL UNIT M78
PKB 36
B
P
V V TO DI-WARN
V
M15
39G
E108
V/R
1
PARKING BRAKE SWITCH E110
APPLIED
RELEASED
B B B
M16 M70
M47 W
M60 W
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M64 W
M65 W
H.S.
M78 W
E8 W
H.S.
E110 W
TKWT6707E

AV-AV-31

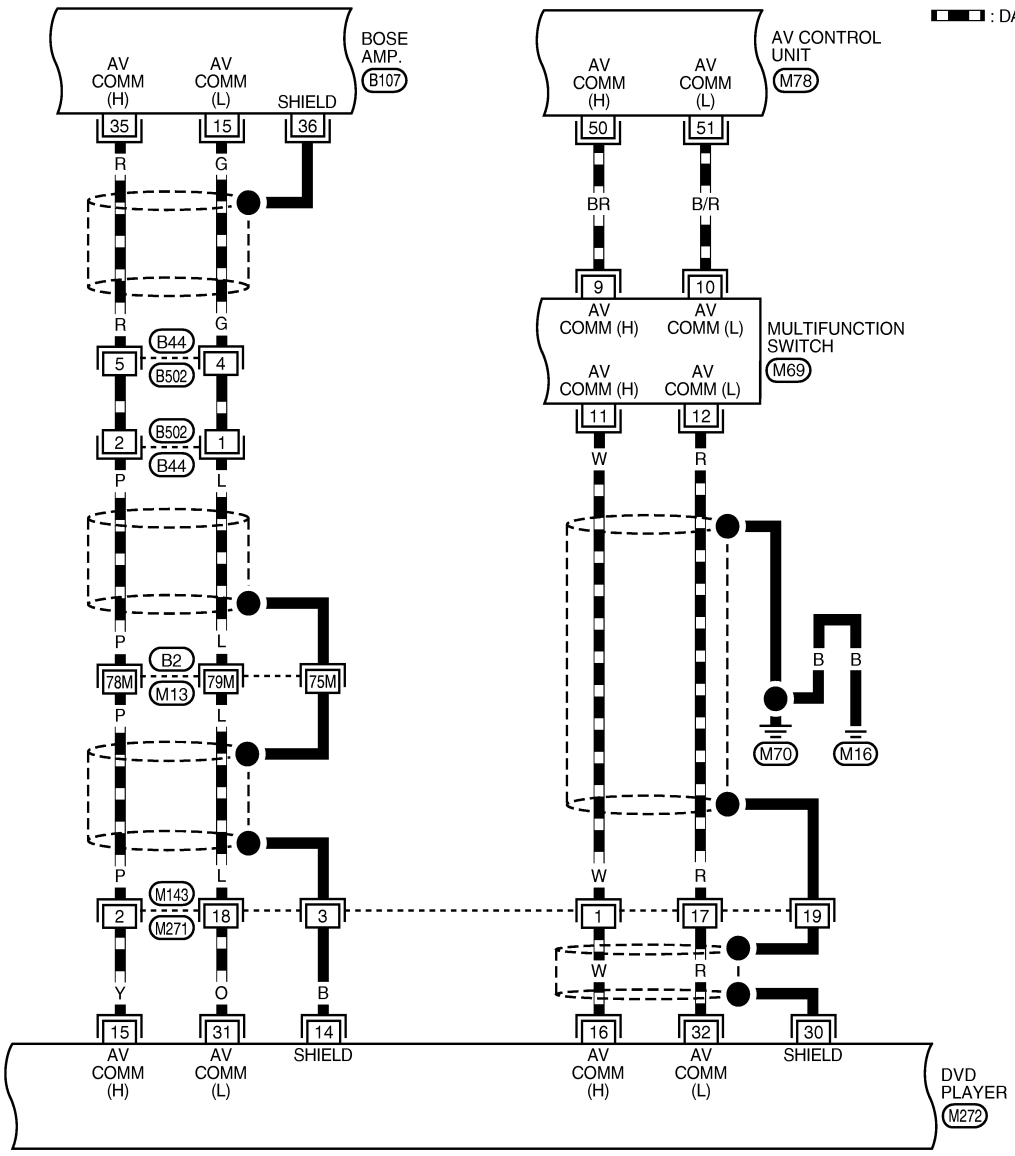


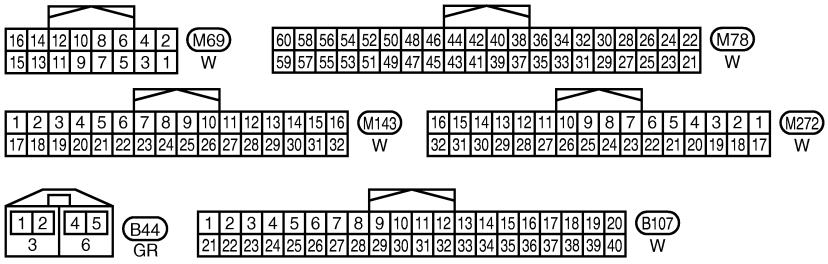


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6708E

AV-AV-32

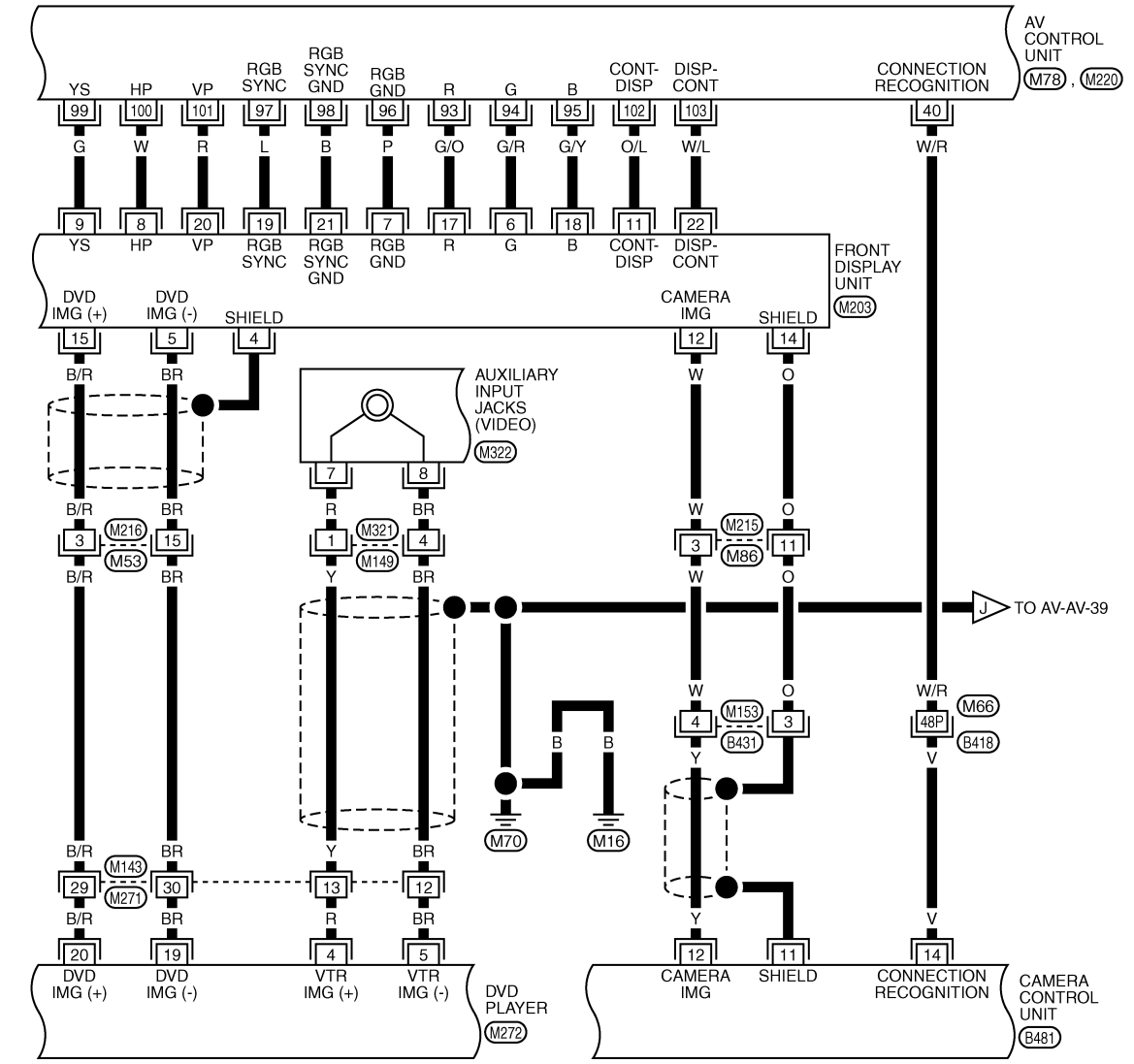


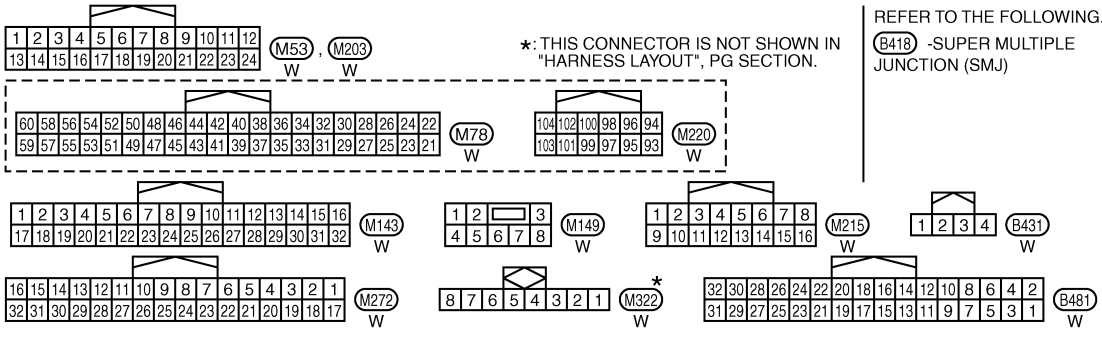


REFER TO THE FOLLOWING.
(B2) - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6709E

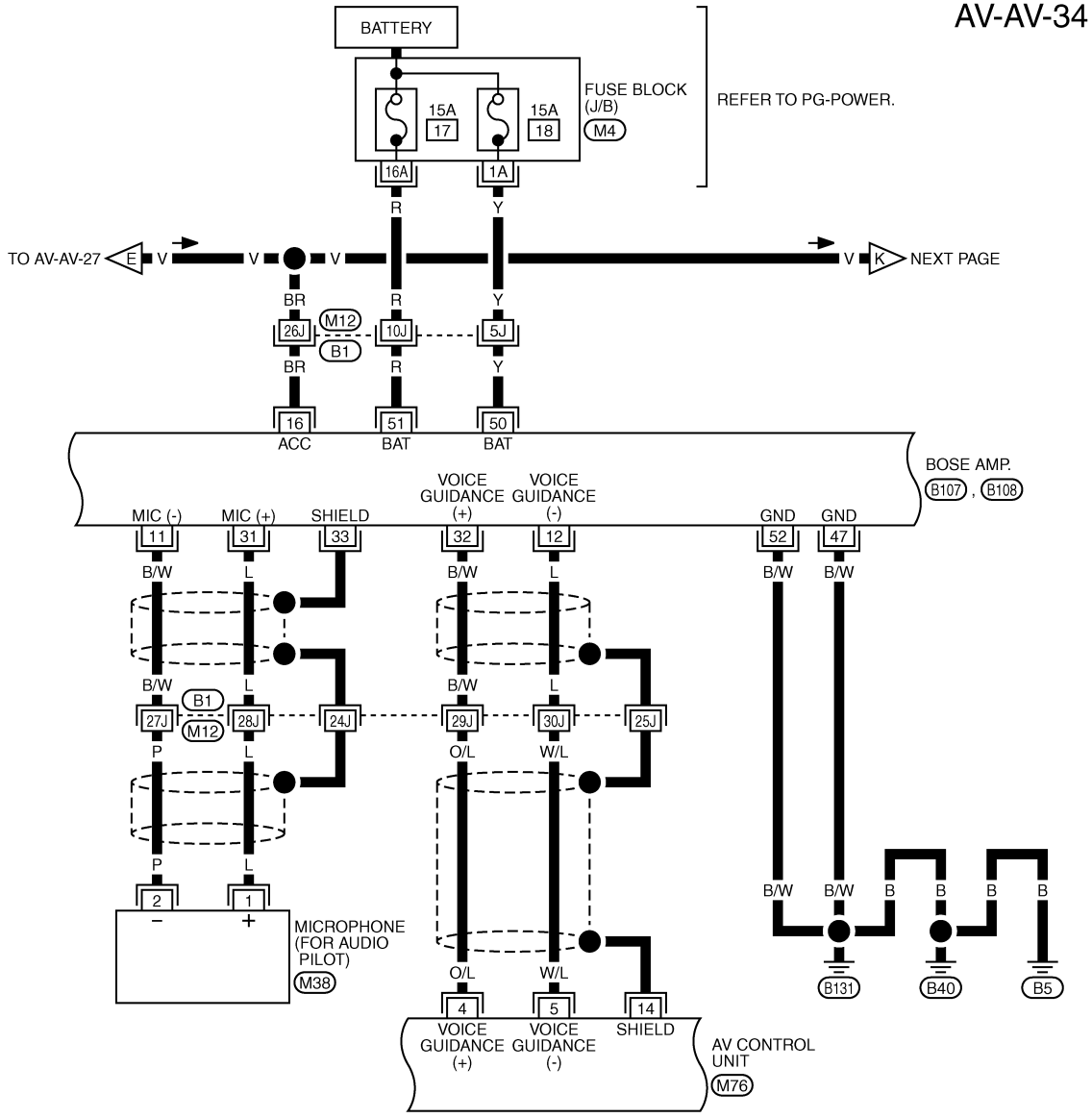
AV-AV-33

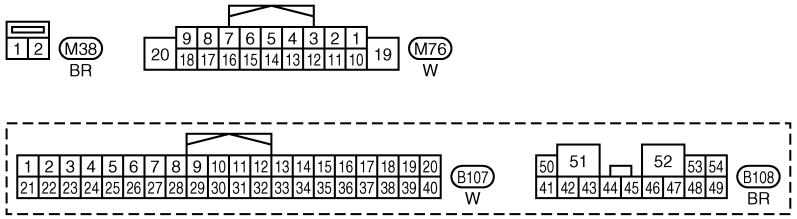




TKWT8285E

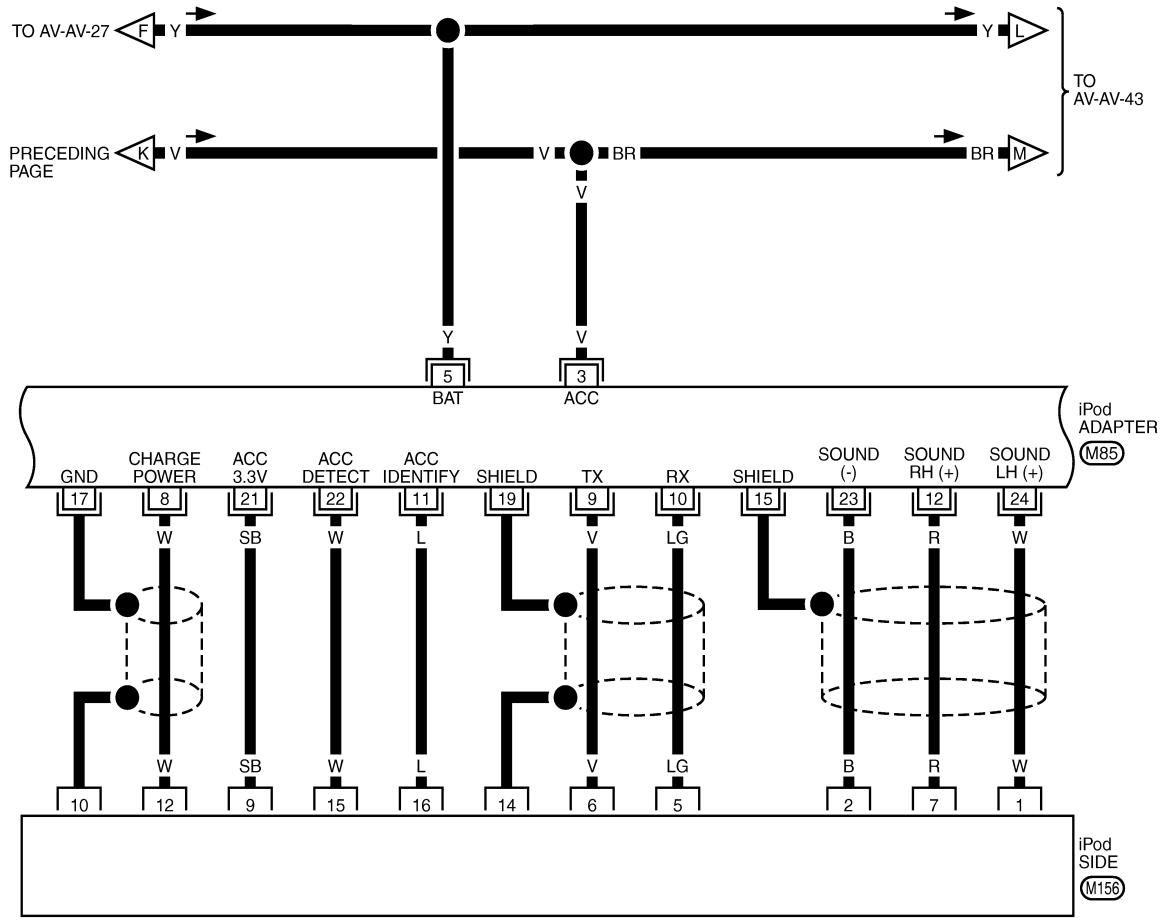
AV-AV-34

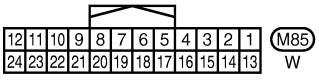


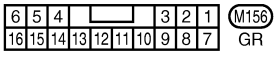


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8286E

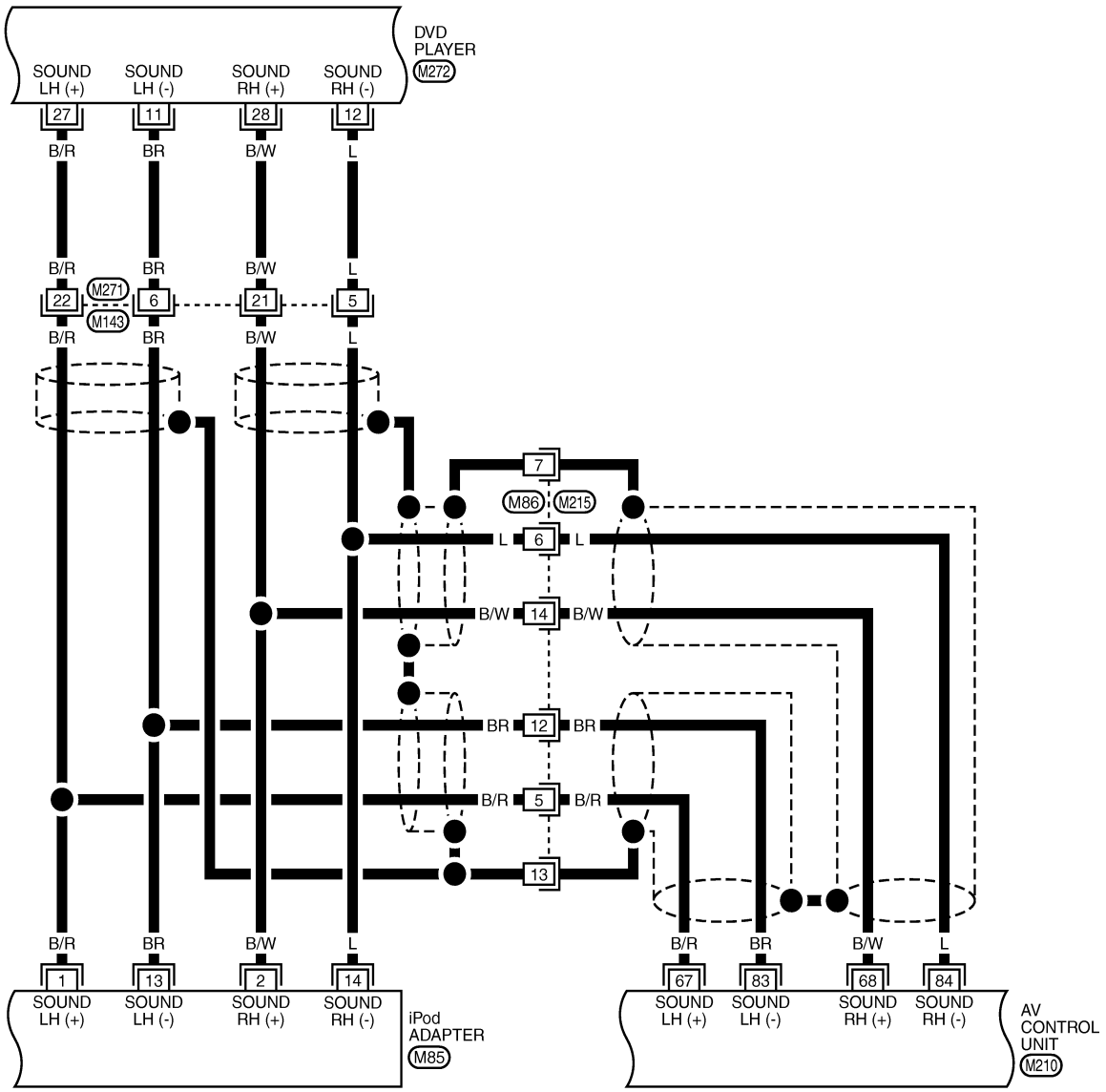

TO AV-AV-27
F
Y
Y
L
TO
AV-AV-43
PRECEDING
PAGE
K
V
V
BR
BR
M
V
Y
V
5
BAT
3
ACC
iPod
ADAPTER
M85
GND
CHARGE
POWER
ACC
3.3V
ACC
DETECT
ACC
IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND
(-)
SOUND
RH (+)
SOUND
LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod
SIDE
M156

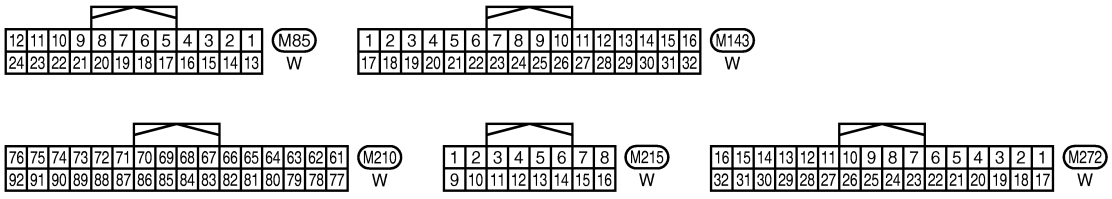

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6713E

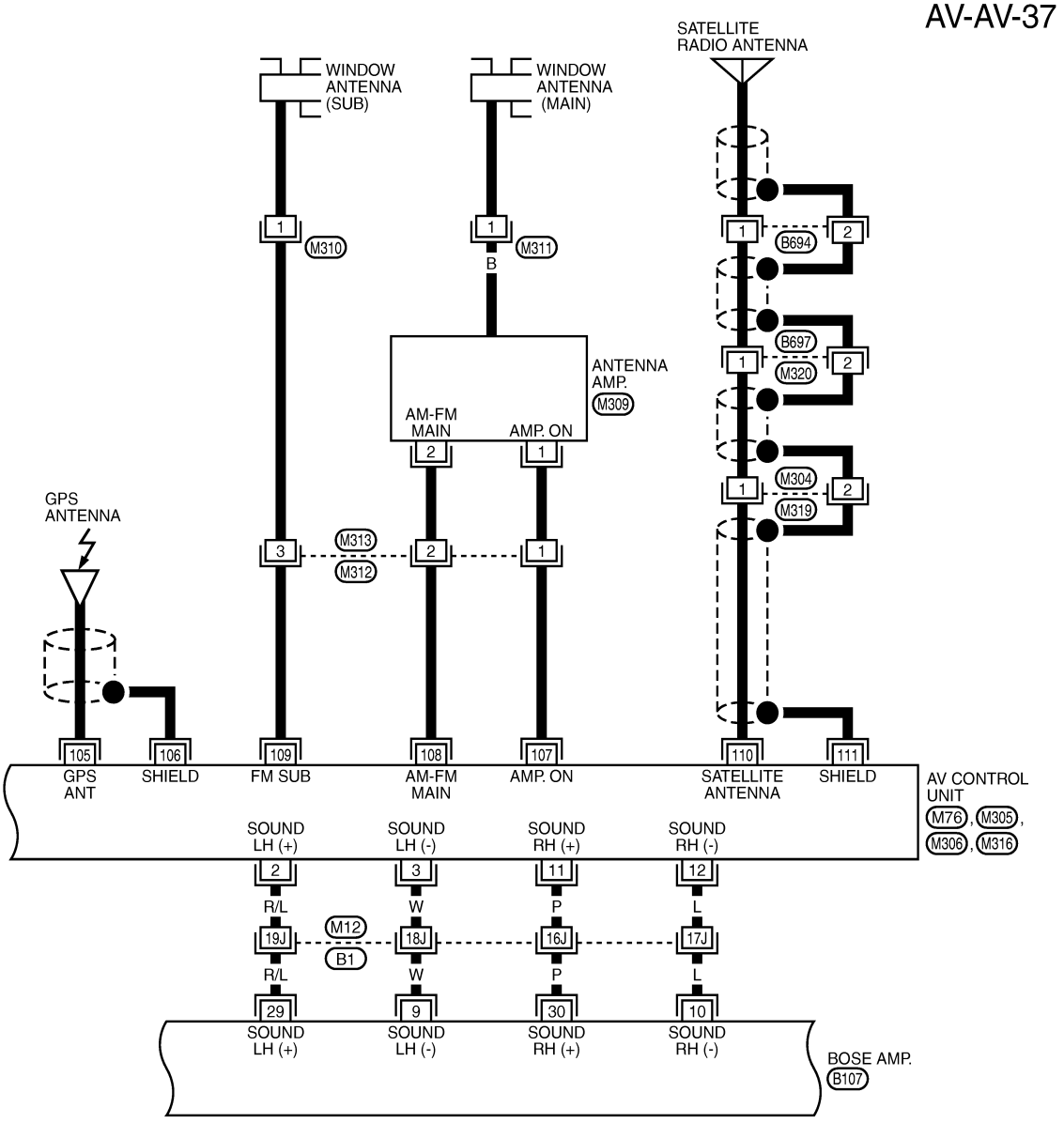
AV-AV-36

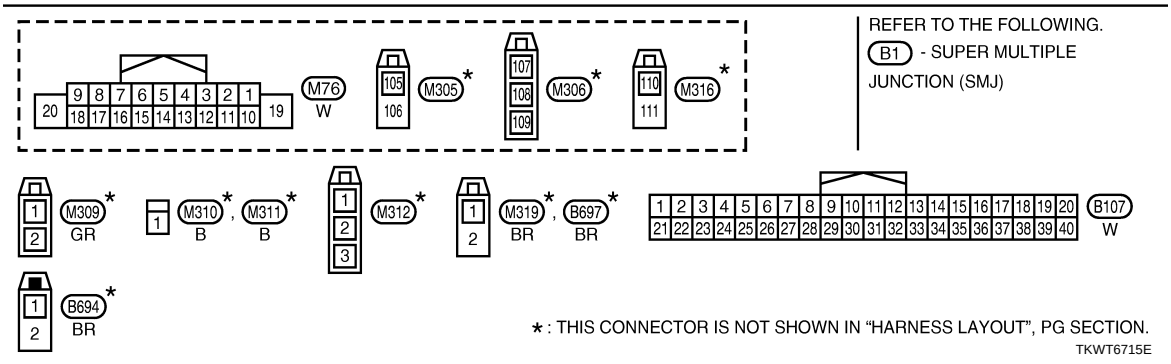




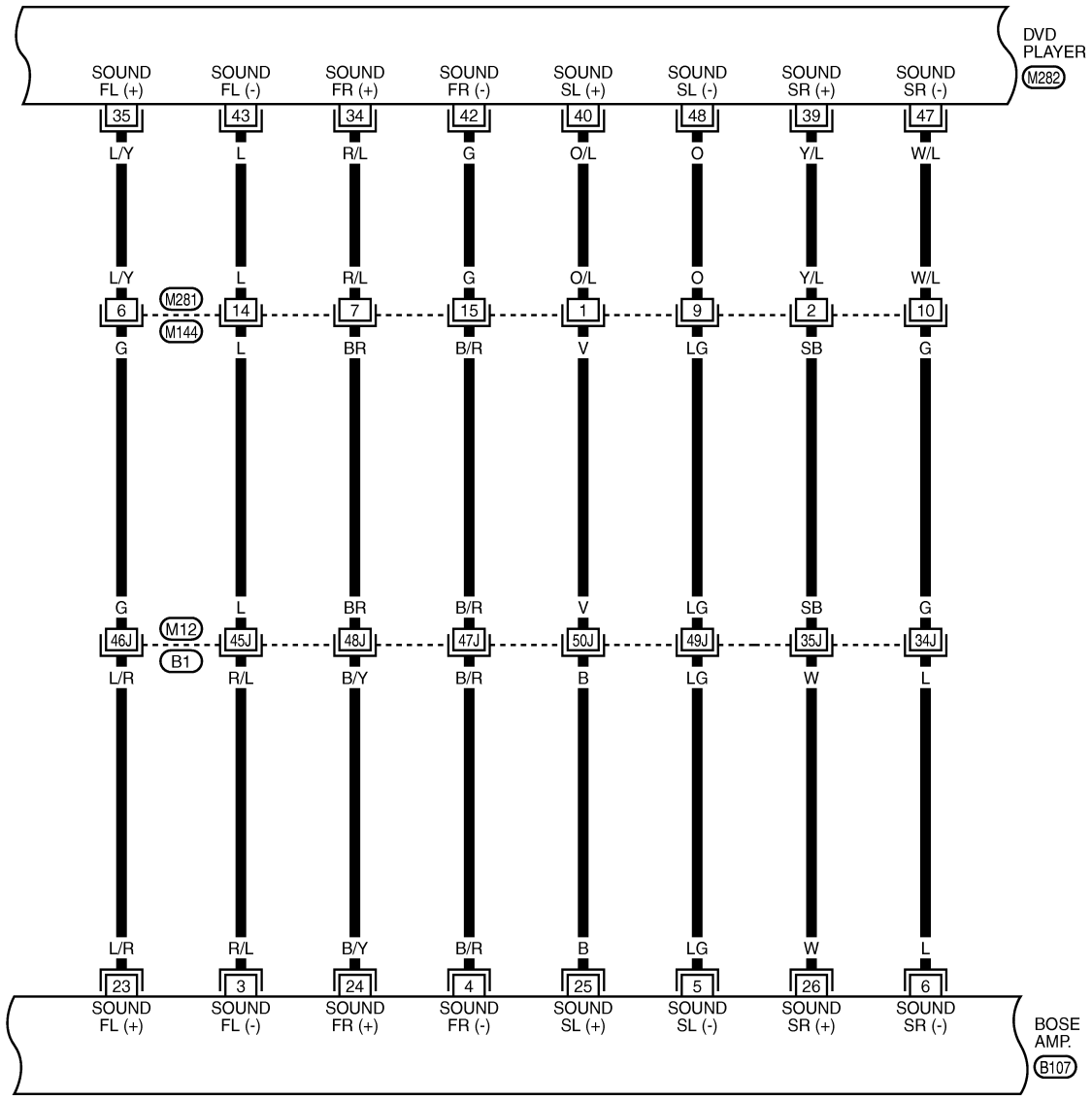
TKWT6714E

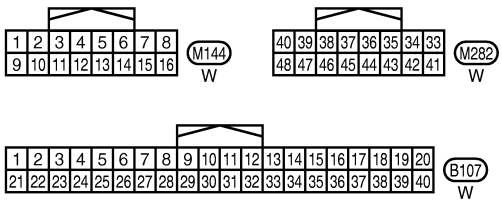
AV-AV-37


SATELLITE RADIO ANTENNA
WINDOW ANTENNA (SUB)
WINDOW ANTENNA (MAIN)
M310
M311
B
B694
B697
M320
M304
M319
ANTENNA AMP.
M309
AM-FM MAIN
AMP. ON
GPS ANTENNA
M313
M312
105
106
109
108
107
110
111
GPS ANT
SHIELD
FM SUB
AM-FM MAIN
AMP. ON
SATELLITE ANTENNA
SHIELD
AV CONTROL UNIT
M76, M305, M306, M316
SOUND LH (+)
SOUND LH (-)
SOUND RH (+)
SOUND RH (-)
R/L
W
P
L
M12
B1
19J
18J
16J
17J
29
9
30
10
BOSE AMP.
B107


M76
W
M305
M306
M316
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)
M309
GR
M310
M311
B
M312
M319
M697
BR
B694
B107
W
* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.
TKWT6715E

AV-AV-38

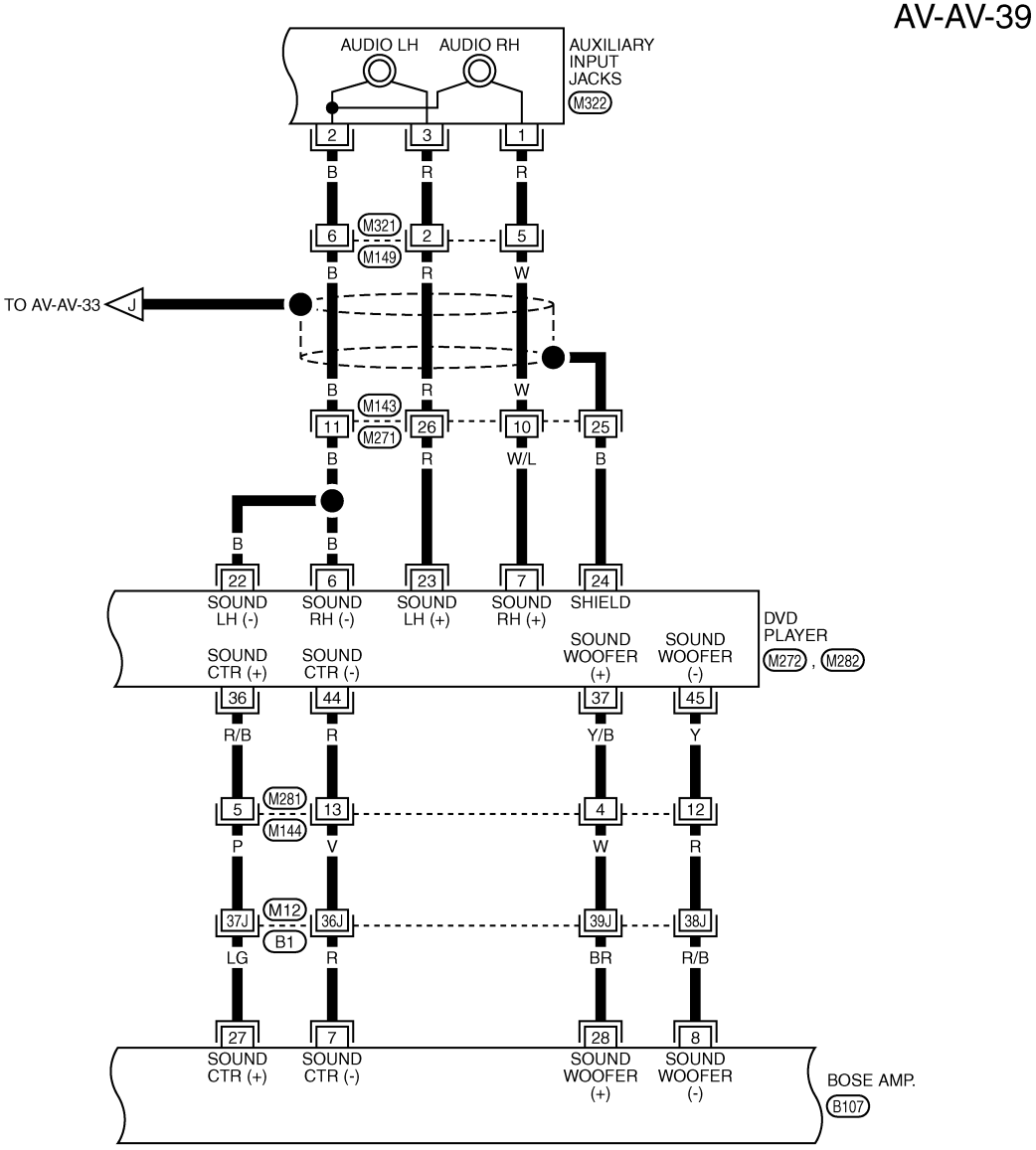


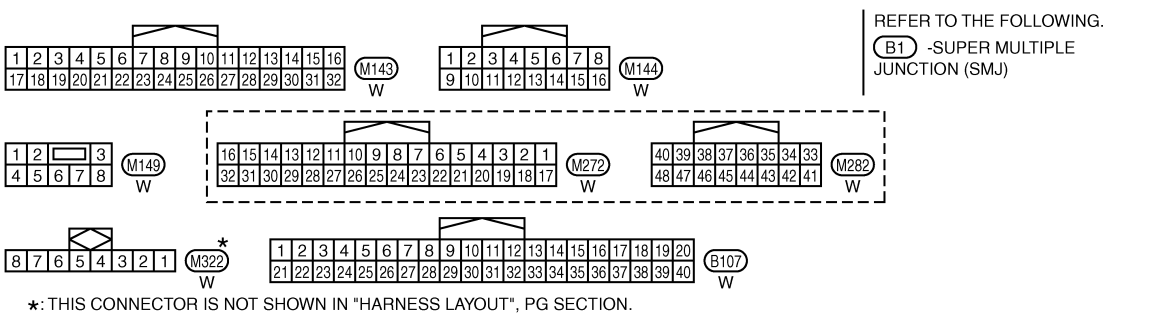


REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6716E

AV-AV-39

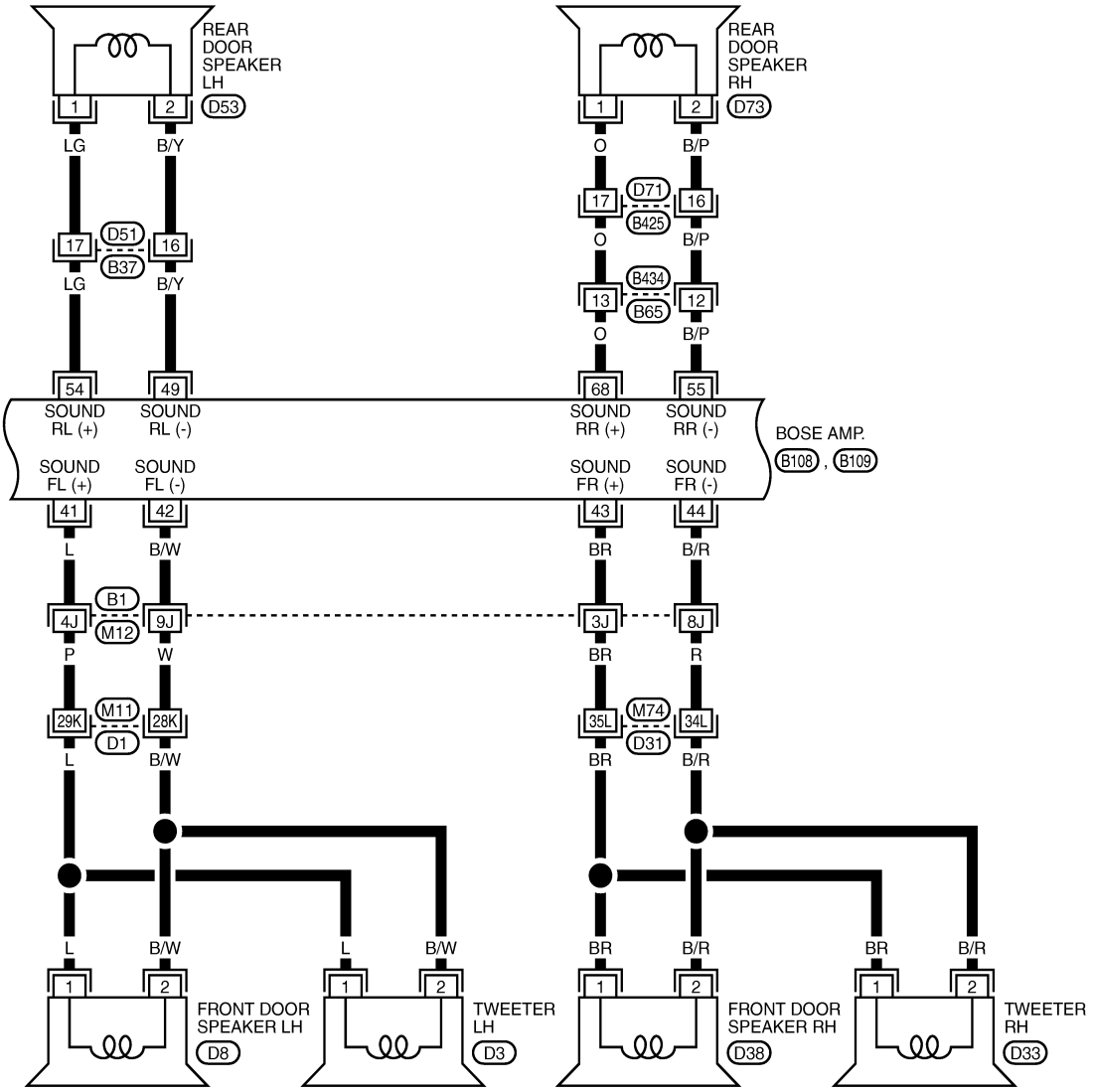


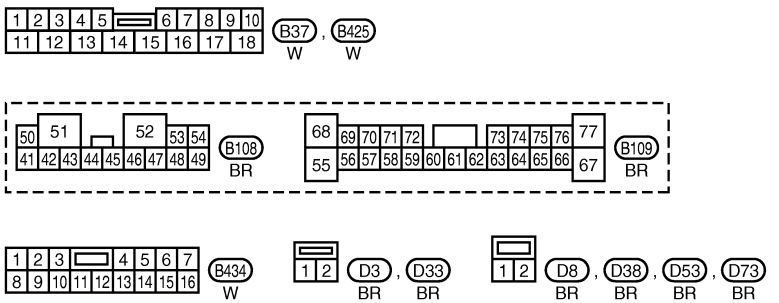


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8287E

AV-AV-40

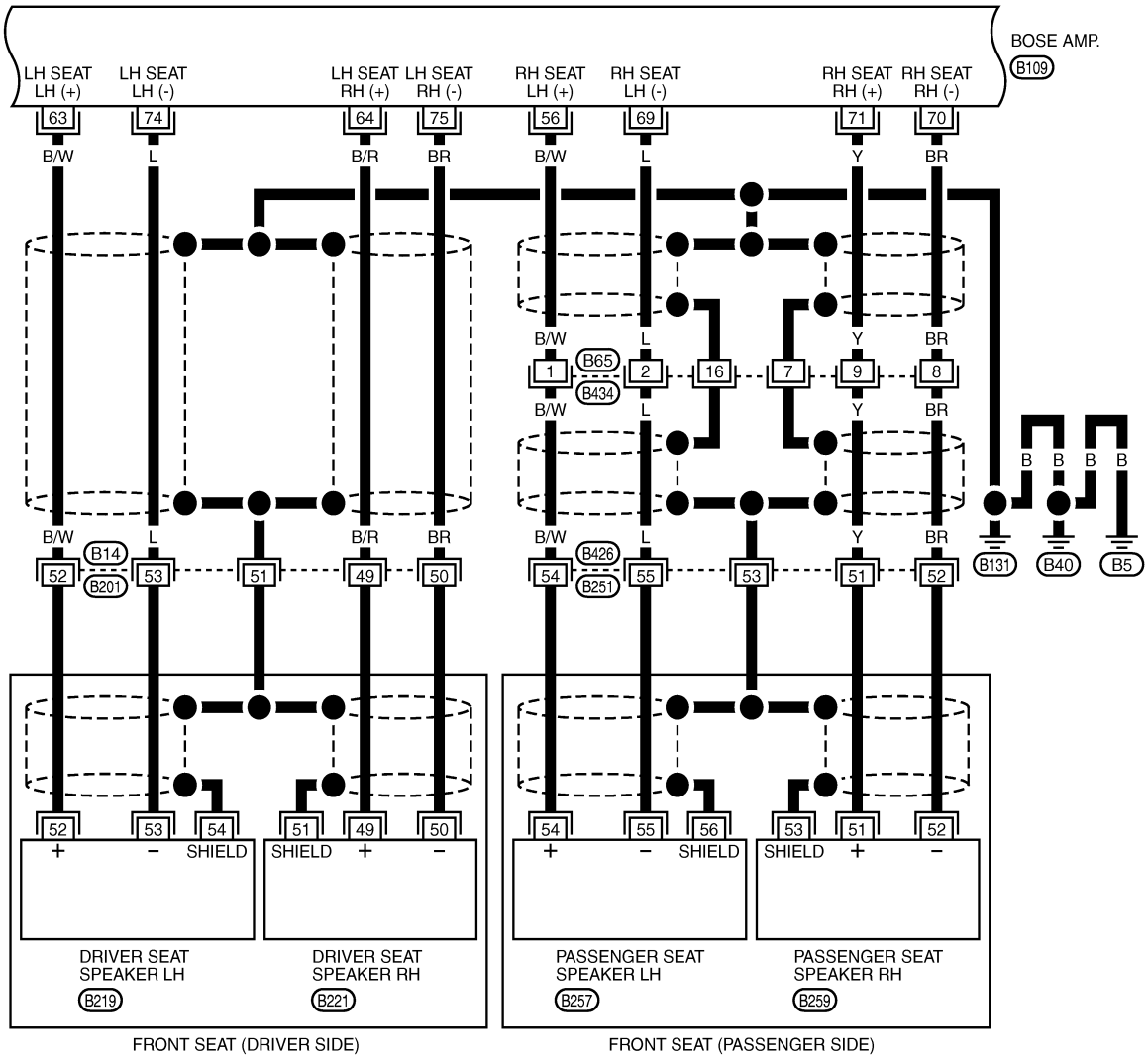


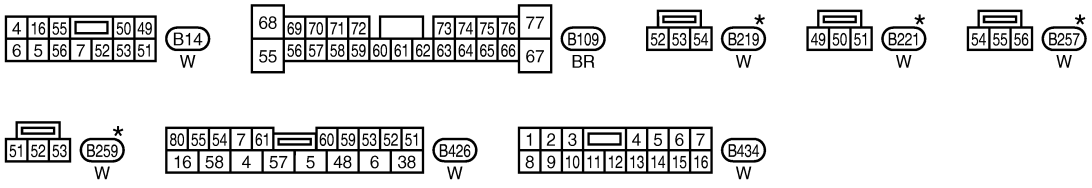


REFER TO THE FOLLOWING.
B1 , D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6718E

AV-AV-41

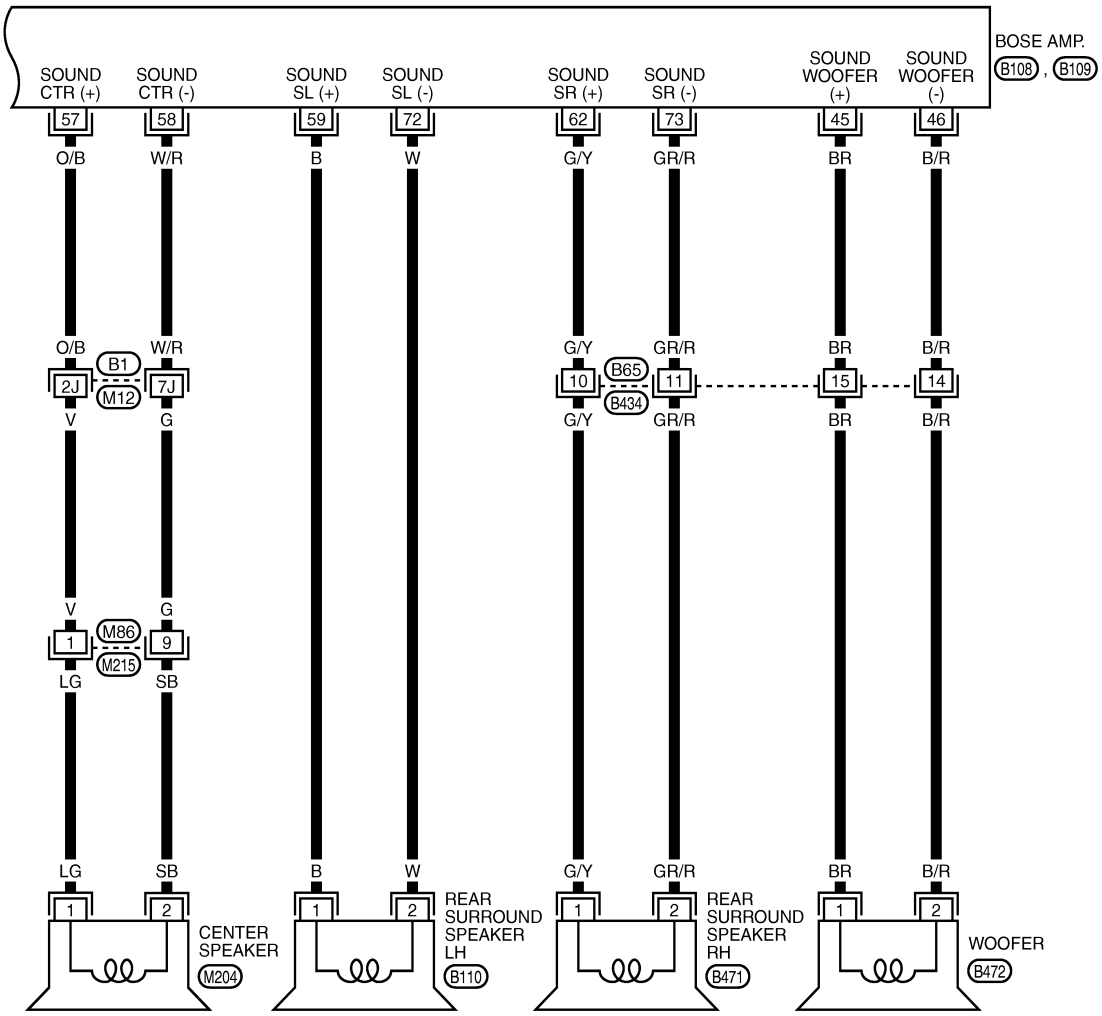


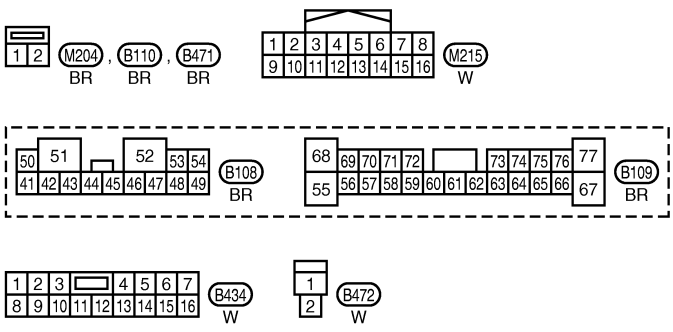


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6719E

AV-AV-42

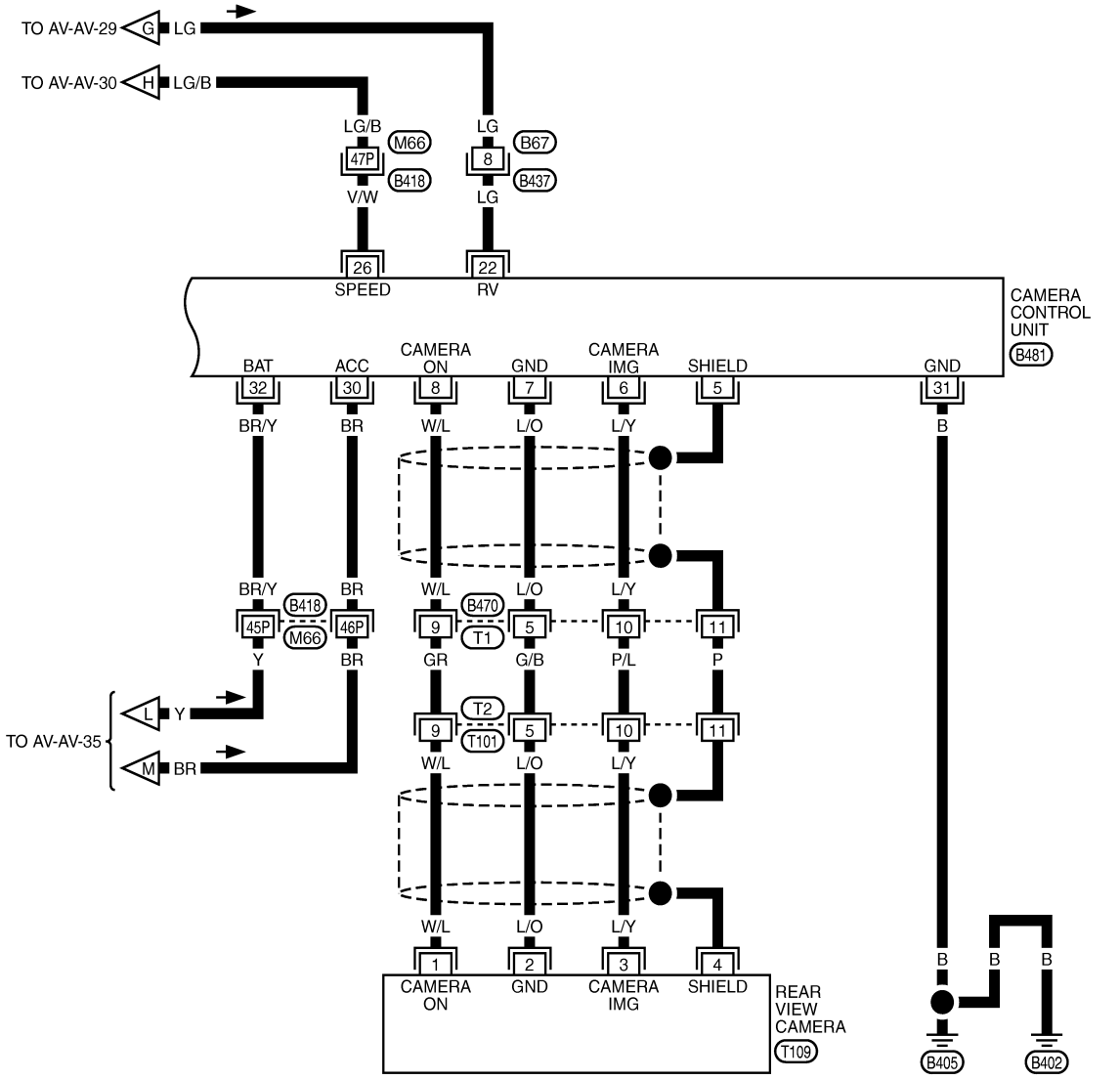


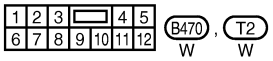


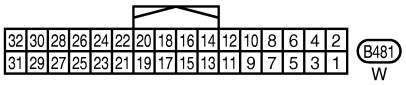
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

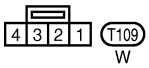
TKWT6720E

AV-AV-43









REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

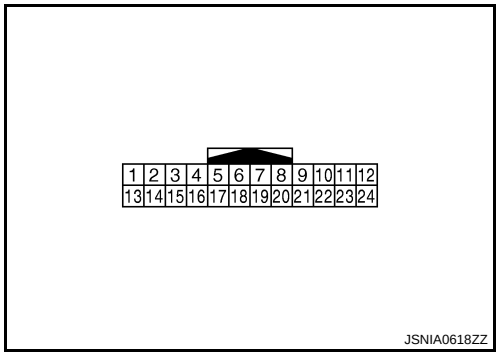
TKWT6721E

IPOD ADAPTER

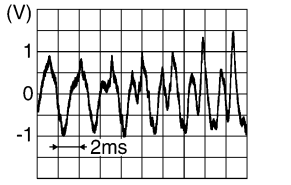
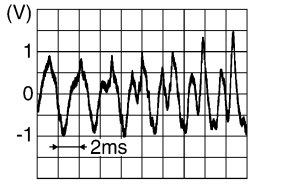
Reference Value

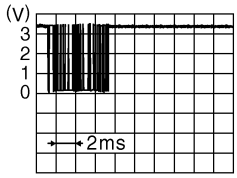
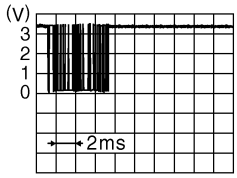
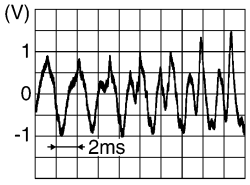
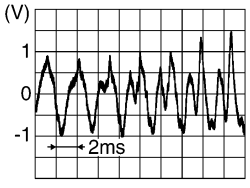
INFOID:0000000004155818

TERMINAL LAYOUT



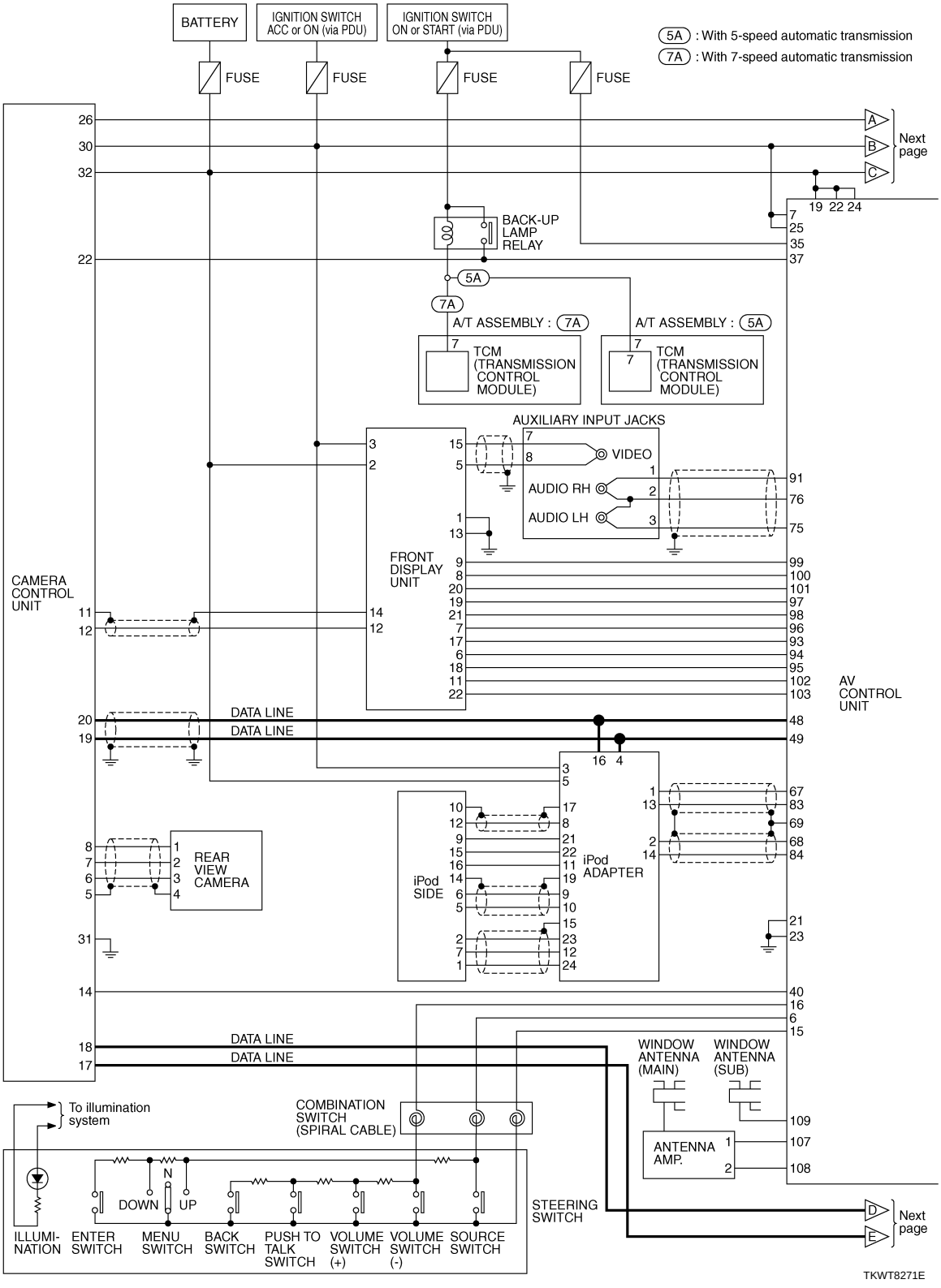
PHYSICAL VALUES

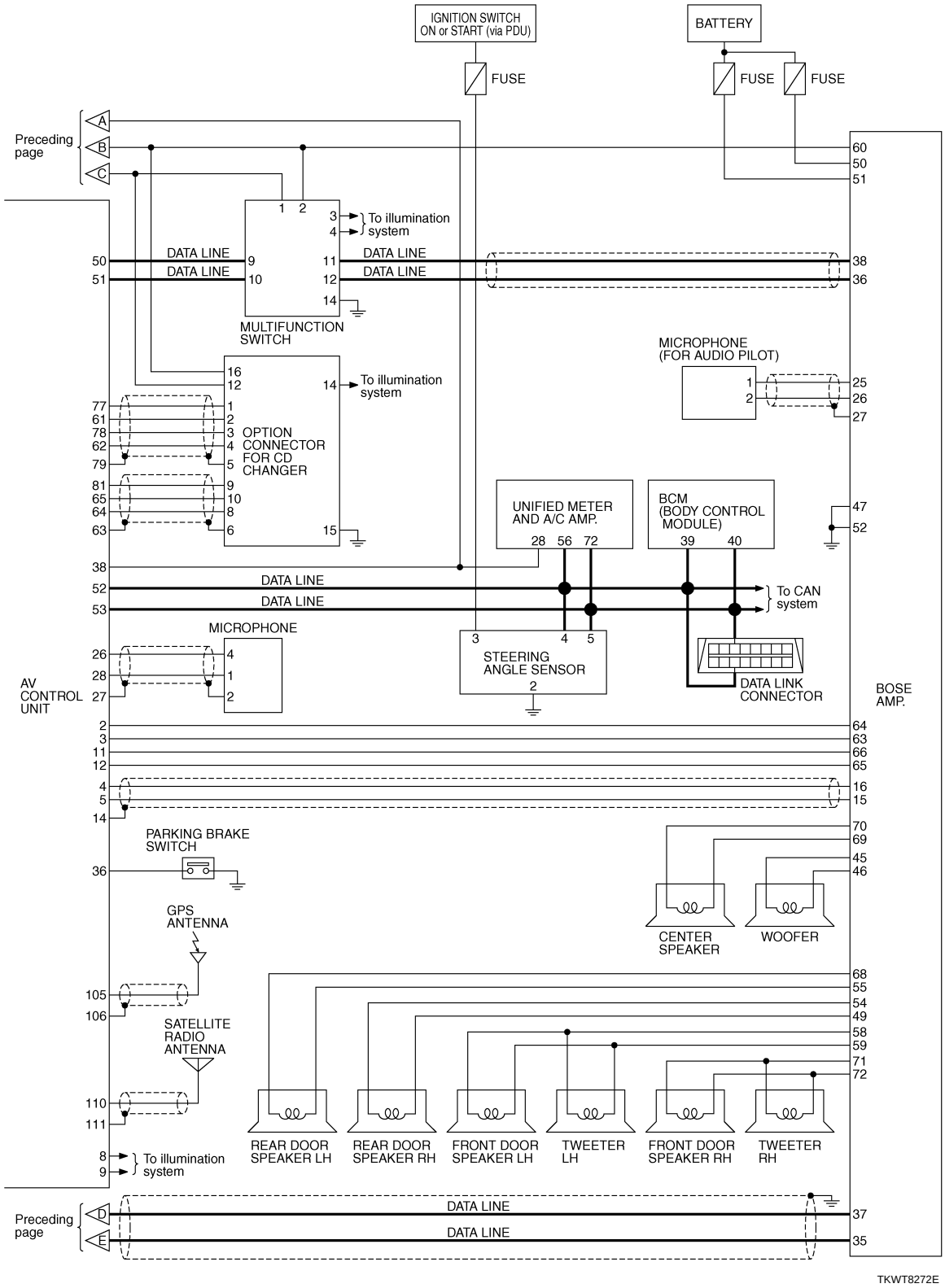
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B/R)	13 (BR)	iPod sound signal LH	Output	Ignition switch ON	Connect and play iPod®.	
2 (B/W)	14 (L)	iPod sound signal RH	Output	Ignition switch ON	Connect and play iPod®.	
3 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
4 (B)	—	AV communication signal (L)	Input/ Output	—	—	—
5 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
8 (W)	Ground	iPod battery charge	Output	Ignition switch ON	Connected to iPod®.	12 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
9 (V)	Ground	Communication signal (iPod adapter→iPod®)	Output	Ignition switch ON	The wave pattern is displayed just after iPod connection.	**NOTE:** After the wave pattern display, the value continues Approx 3.3 V  JPNIA0462GB
10 (LG)	Ground	Communication signal (iPod®→iPod adapter)	Input	Ignition switch ON	Connected to iPod®.	 JPNIA0462GB
11 (L)	Ground	ACCESSORY-IDENTIFY	—	Ignition switch ON	Connected to iPod®.	0 V
12 (R)	23 (B)	iPod sound signal RH	Input	Ignition switch ON	Connect and play iPod®.	 SKIB3609E
15	—	Shield	—	—	—	—
16 (W)	—	AV communication signal (H)	Input/ Output	—	—	—
17	Ground	Ground	—	Ignition switch ON	—	0 V
19	—	Shield	—	—	—	—
21 (SB)	Ground	iPod connection recognition signal	Input	Ignition switch ON	Not connected to iPod®.	4 V
					Connected to iPod®.	0 V
22 (W)	Ground	ACCESSORY-DETECT	—	Ignition switch ON	Connected to iPod®.	0 V
24 (W)	23 (B)	iPod sound signal LH	Input	Ignition switch ON	Connect and play iPod®.	 SKIB3609E

Schematic - BOSE Audio 2ch System -

INFOID:0000000004380460





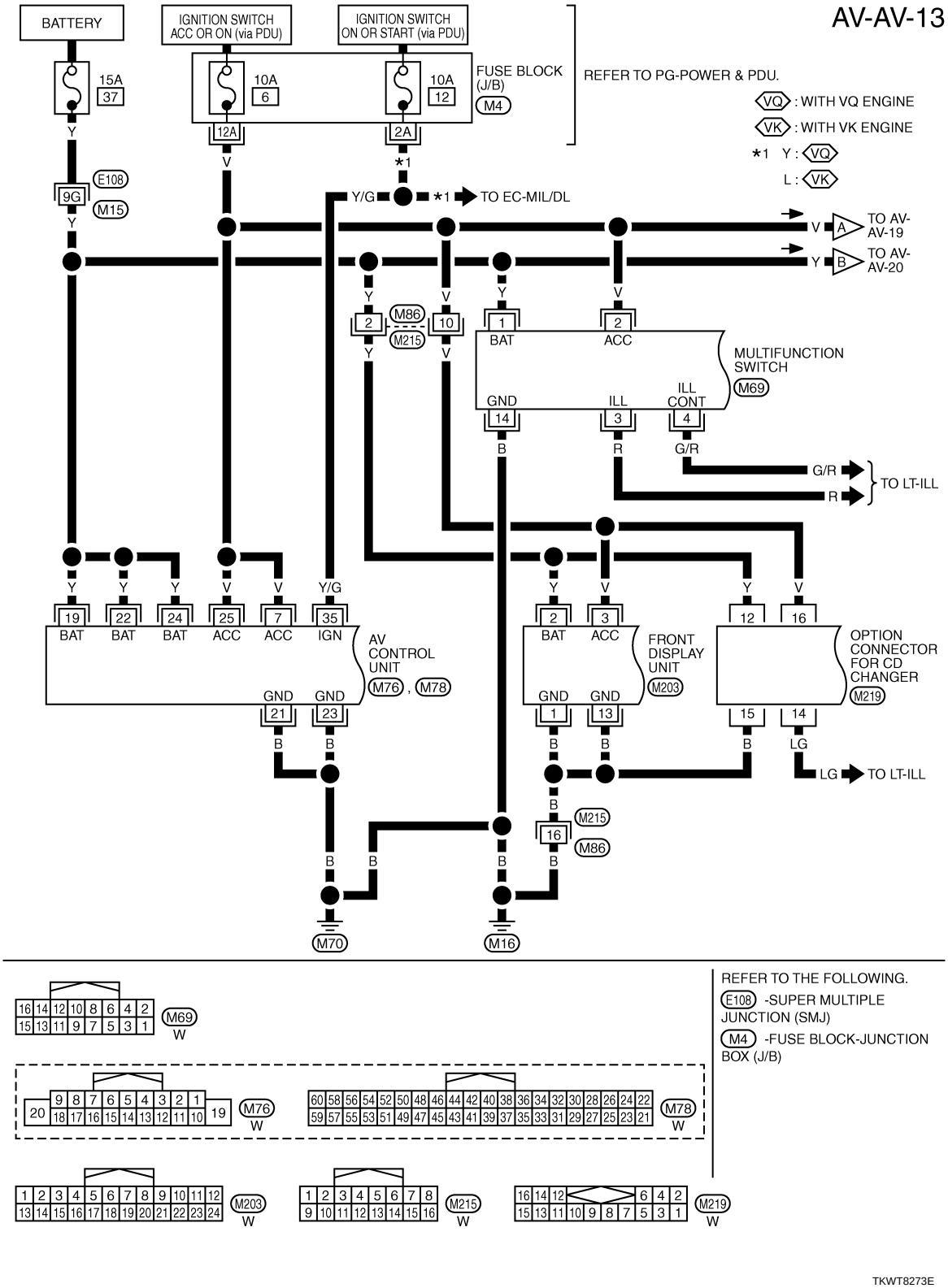
TKWT8272E

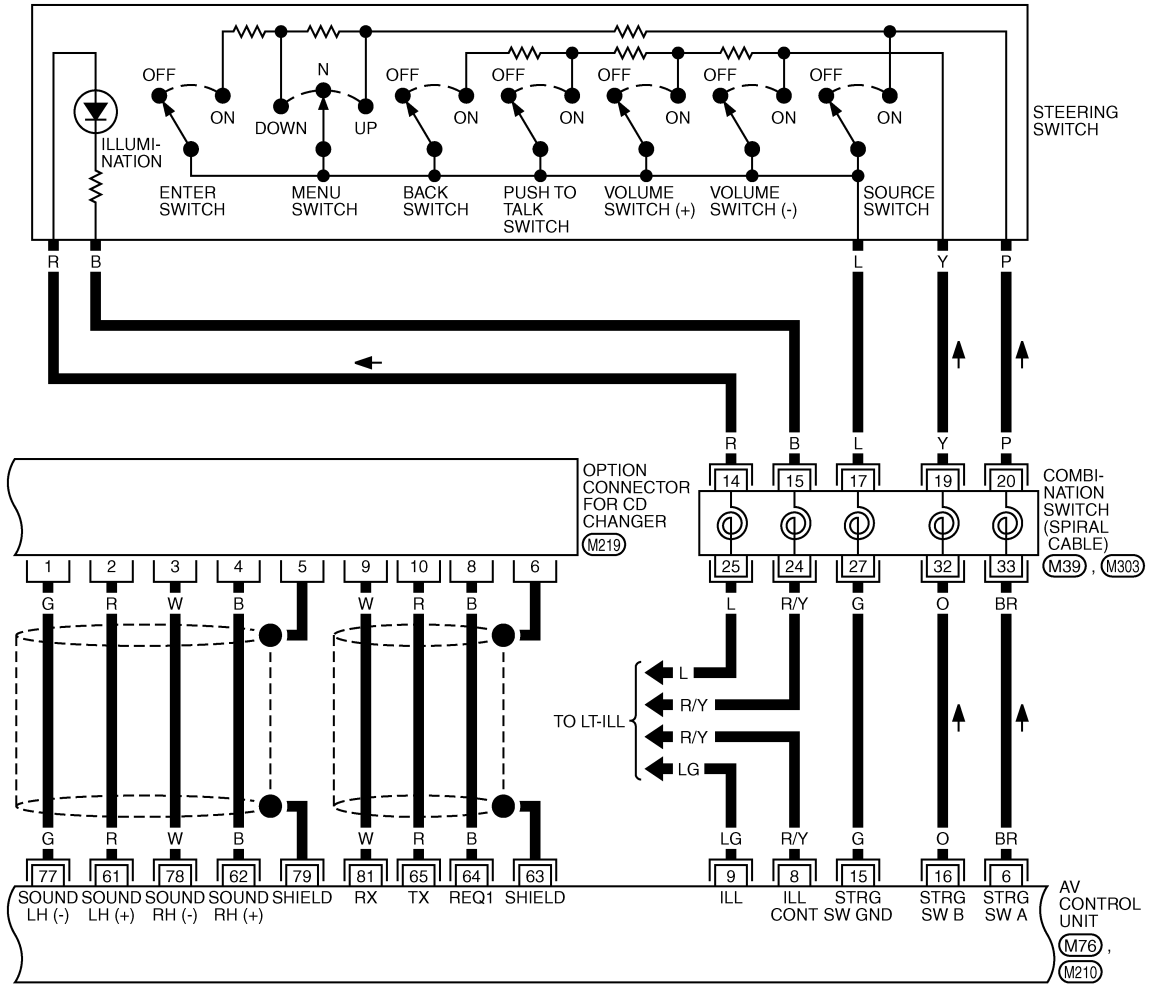
Wiring Diagram - AV - / BOSE Audio 2ch System

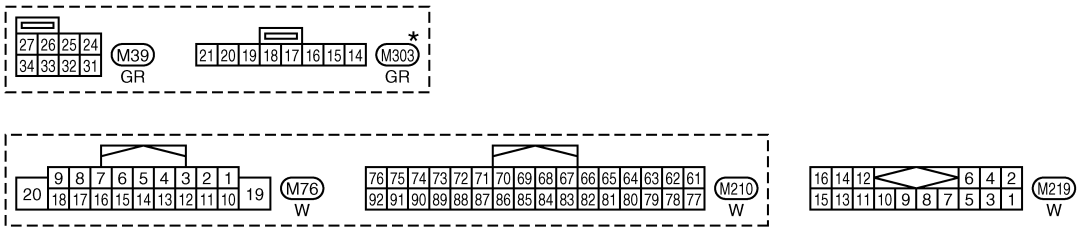
INFOID:0000000004380461

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

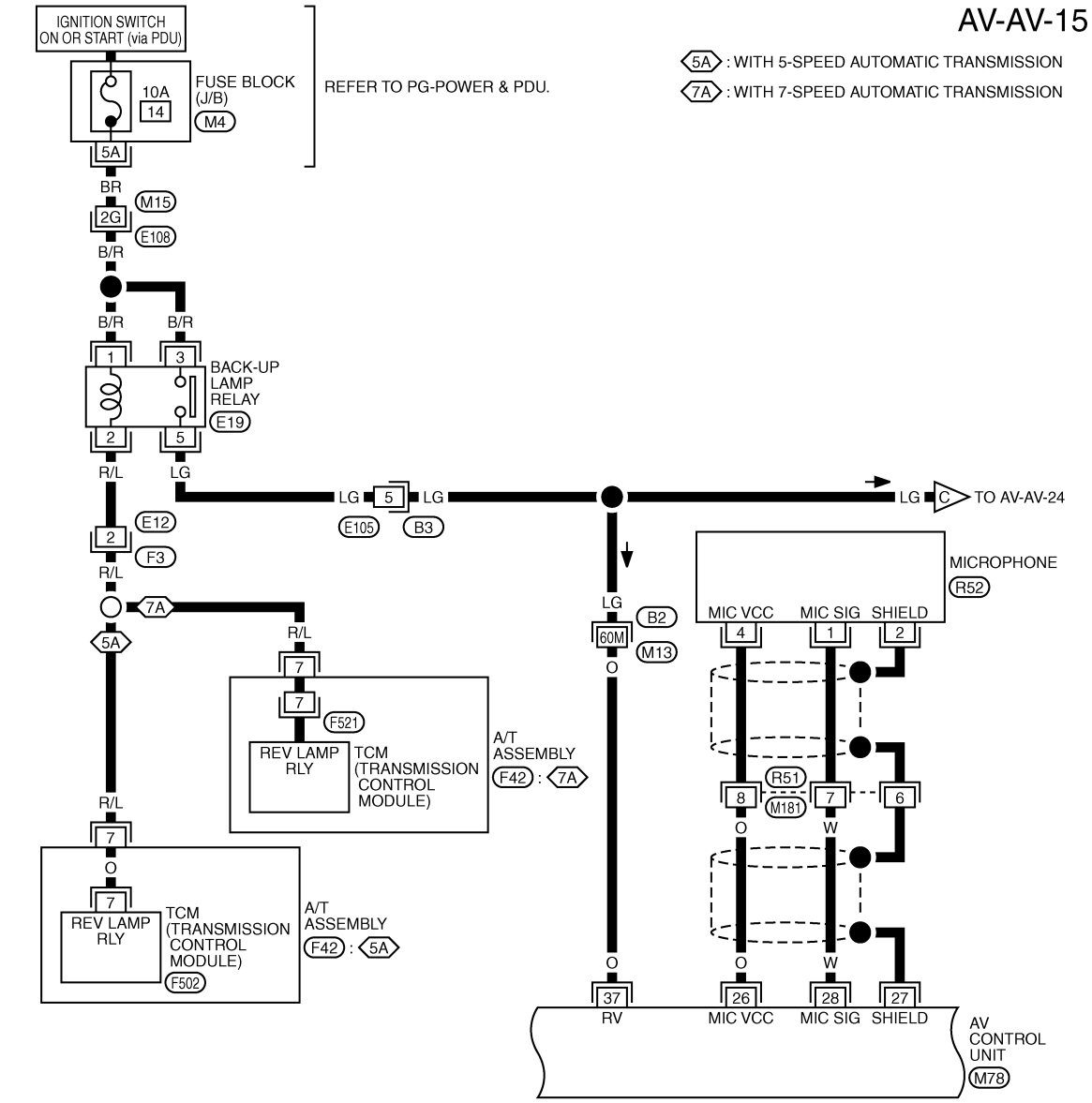






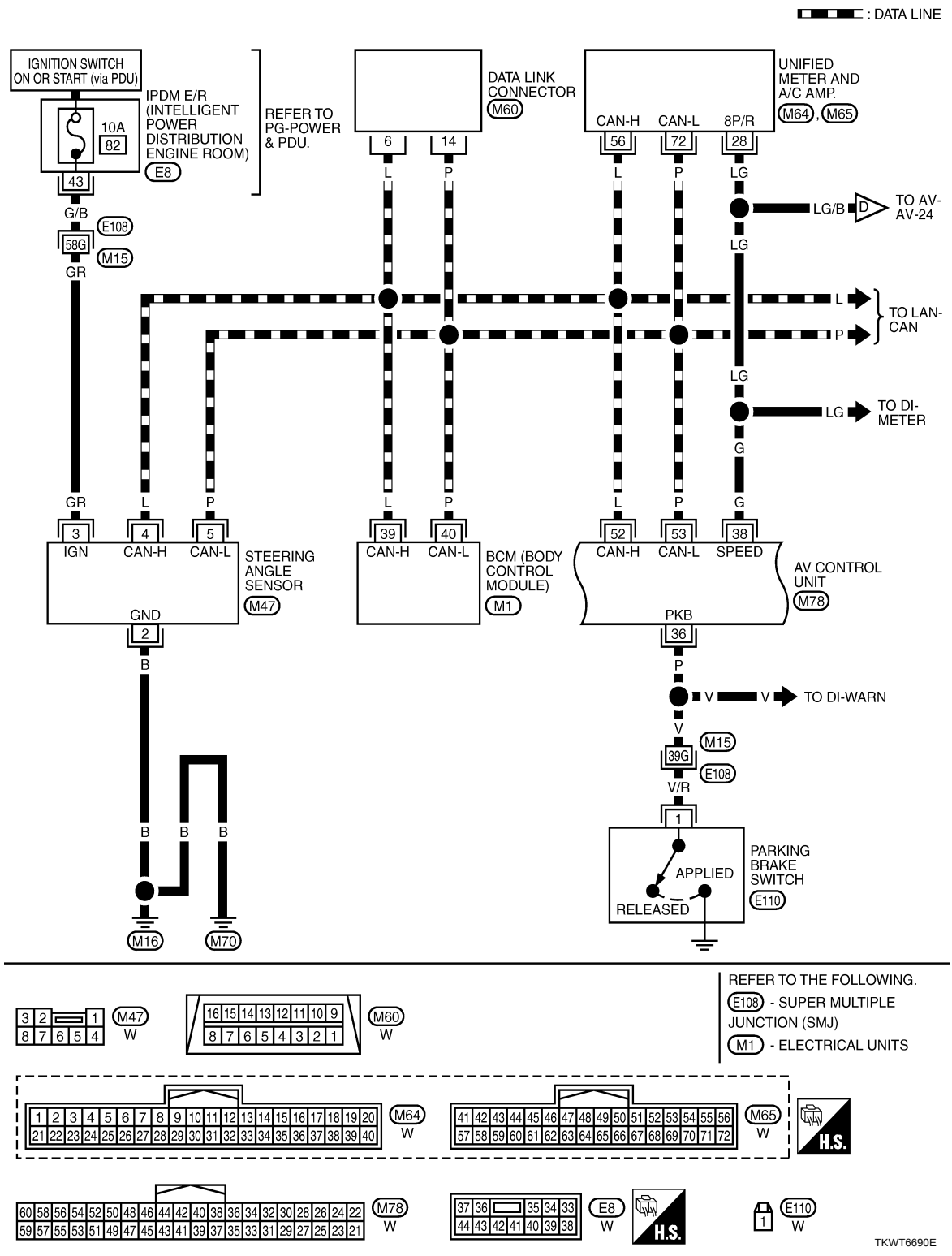
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

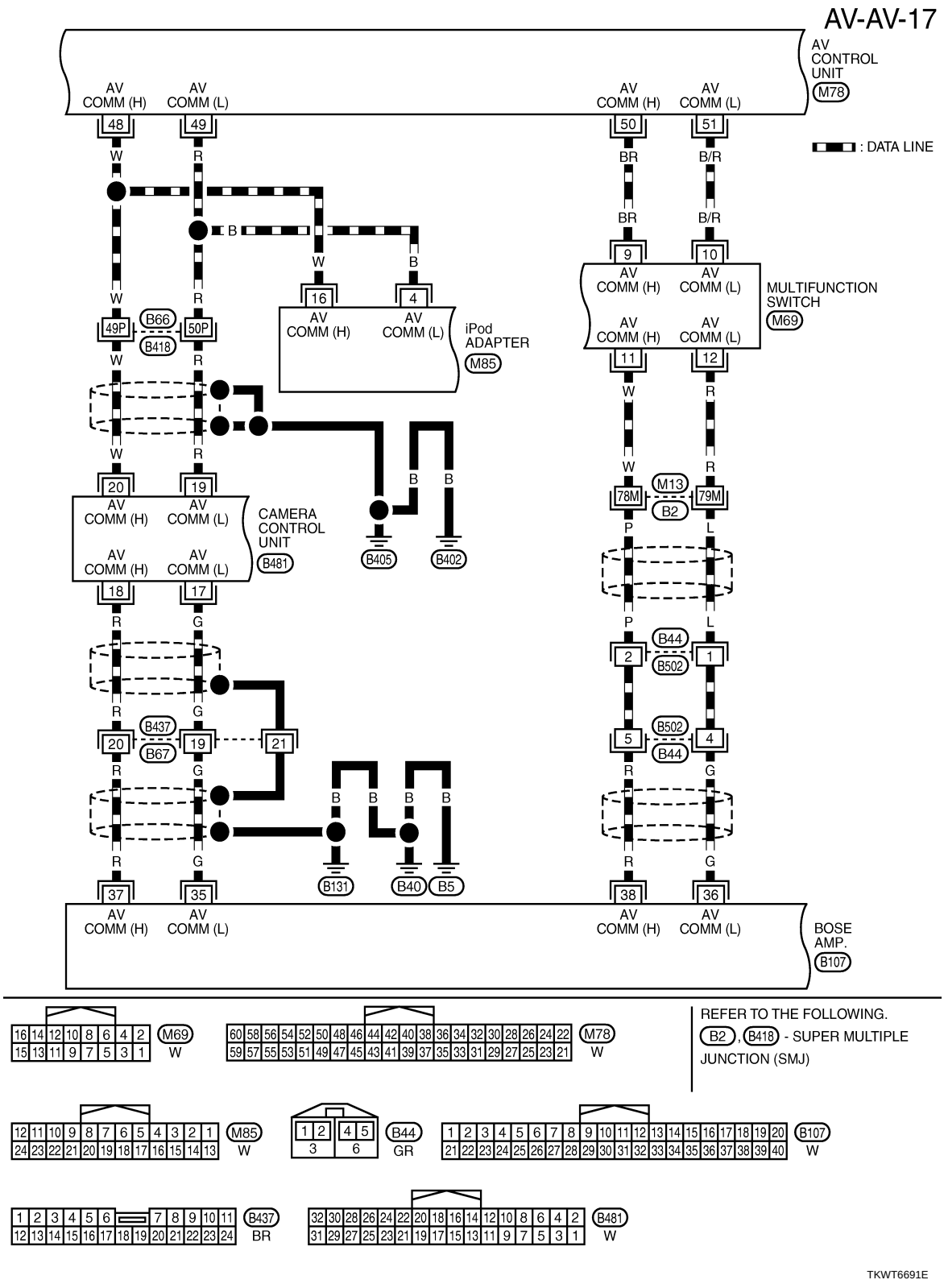
TKWT8274E


AV-AV-15
5A : WITH 5-SPEED AUTOMATIC TRANSMISSION
7A : WITH 7-SPEED AUTOMATIC TRANSMISSION
IGNITION SWITCH ON OR START (via PDU)
FUSE BLOCK (J/B) M4
10A 14
5A
REFER TO PG-POWER & PDU.
BR
2G M15
E108
B/R
B/R B/R
1 3
2 5
BACK-UP LAMP RELAY E19
R/L LG
LG 5 LG
E105 B3
LG C TO AV-AV-24
2 E12
F3
R/L
7A
5A
R/L
7
7 F521
REV LAMP RLY
TCM (TRANSMISSION CONTROL MODULE)
A/T ASSEMBLY F42 : 7A
R/L
7
O
7
REV LAMP RLY
TCM (TRANSMISSION CONTROL MODULE) F502
A/T ASSEMBLY F42 : 5A
LG B2
60M M13
O
MICROPHONE R52
MIC VCC MIC SIG SHIELD
4 1 2
R51
8 M181 7 6
O W
O W
37 26 28 27
RV MIC VCC MIC SIG SHIELD
AV CONTROL UNIT M78
M78 W
E19 L
F3 B
F42 G
F502 GR
F521 G
B3 W
R51 W
R52 W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

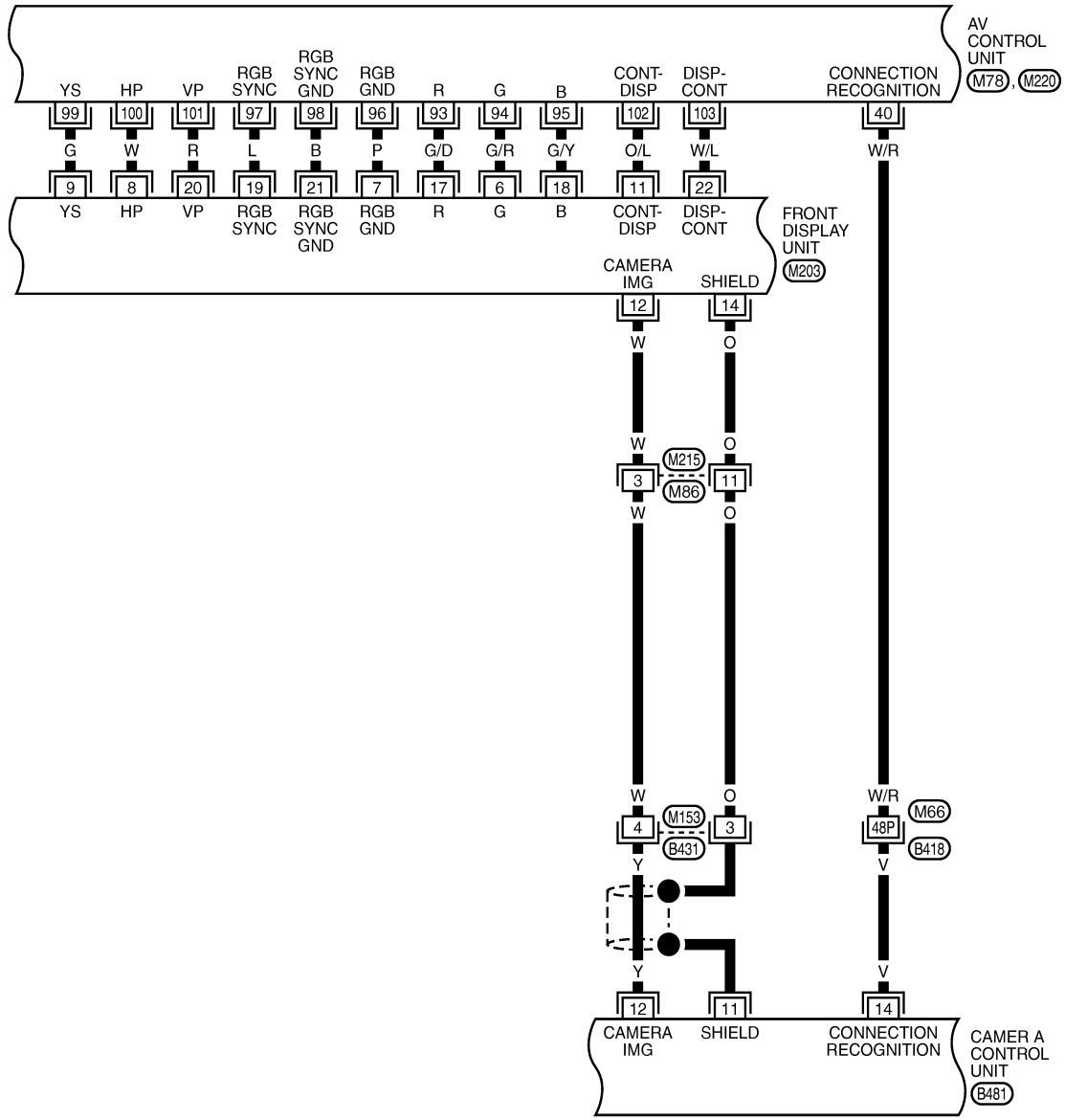
TKWT8275E

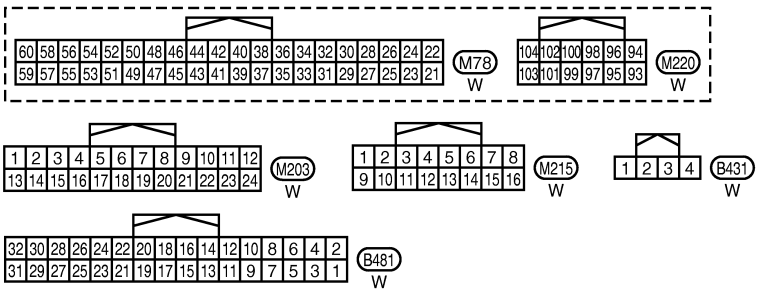
AV-AV-16


: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
G/B
E108
58G
M15
GR
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
L
P
UNIFIED METER AND A/C AMP. M64, M65
CAN-H
CAN-L
8P/R
56
72
28
L
P
LG
LG/B
D
TO AV-AV-24
LG
L
P
TO LAN-CAN
LG
LG
TO DI-METER
G
GR
L
P
3
IGN
4
CAN-H
5
CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
39
CAN-H
40
CAN-L
BCM (BODY CONTROL MODULE) M1
52
CAN-H
53
CAN-L
38
SPEED
AV CONTROL UNIT M78
PKB
36
P
V
V
TO DI-WARN
V
39G
M15
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B
B
B
M16
M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47
W
M60
W
M64
W
M65
W
H.S.
M78
W
E8
W
H.S.
E110
W
TKWT6690E


AV-AV-17
AV CONTROL UNIT
M78
AV COMM (H)
AV COMM (L)
: DATA LINE
MULTIFUNCTION SWITCH
M69
iPod ADAPTER
M85
CAMERA CONTROL UNIT
B481
BOSE AMP.
B107
B66
B418
B405
B402
M13
B2
B44
B502
B437
B67
B131
B40
B5
REFER TO THE FOLLOWING.
B2 , B418 - SUPER MULTIPLE JUNCTION (SMJ)
M69
M78
M85
B44
B107
B437
B481
TKWT6691E

AV-AV-18

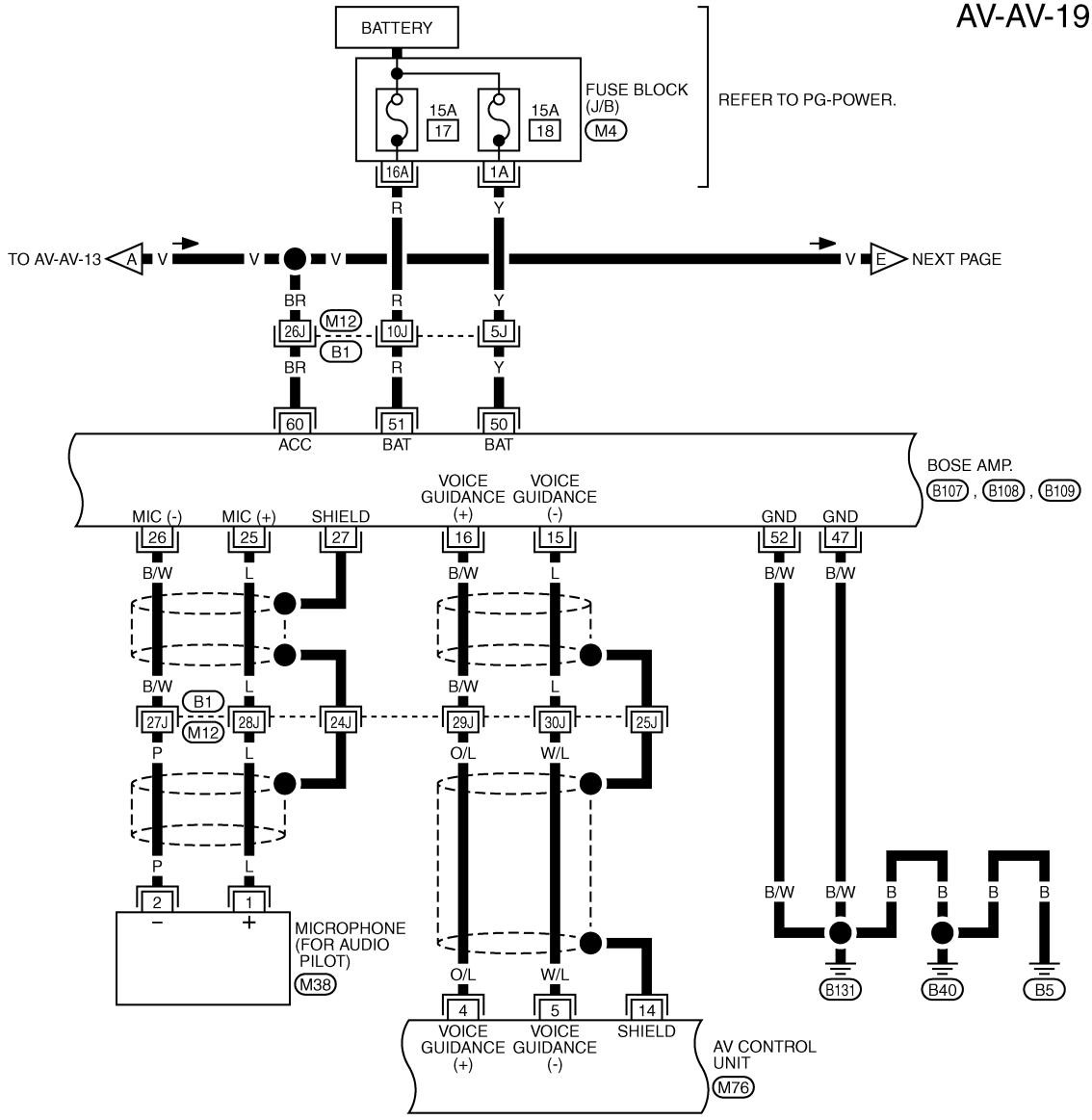


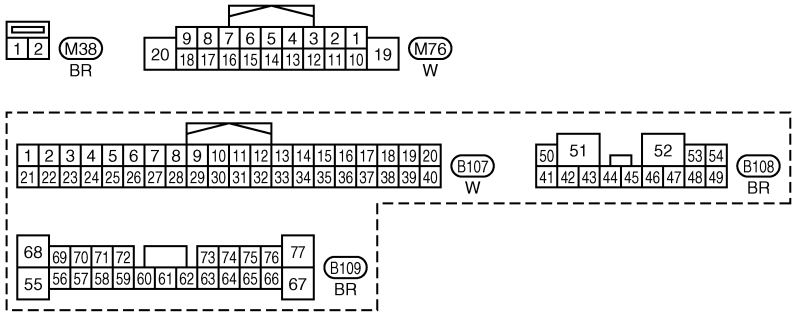


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6692E

AV-AV-19

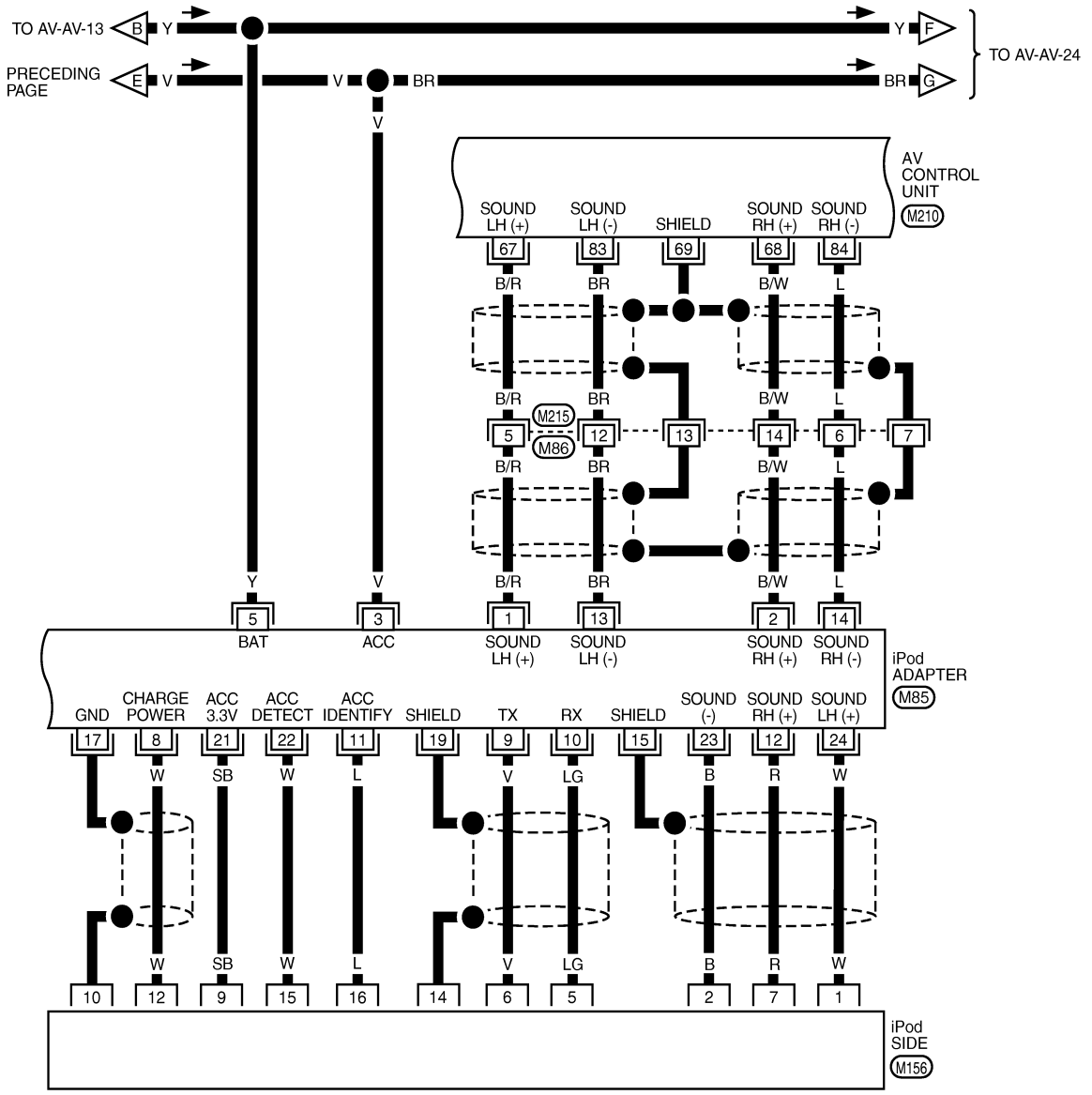


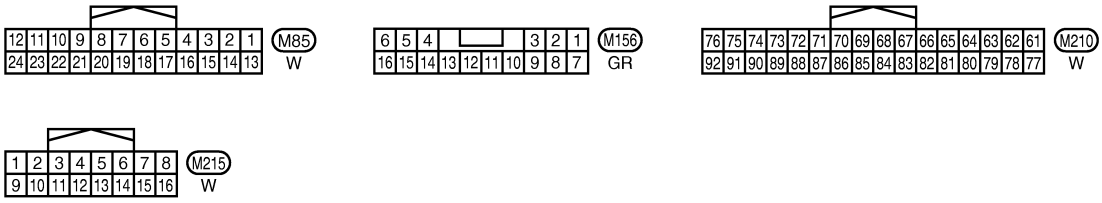


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8276E

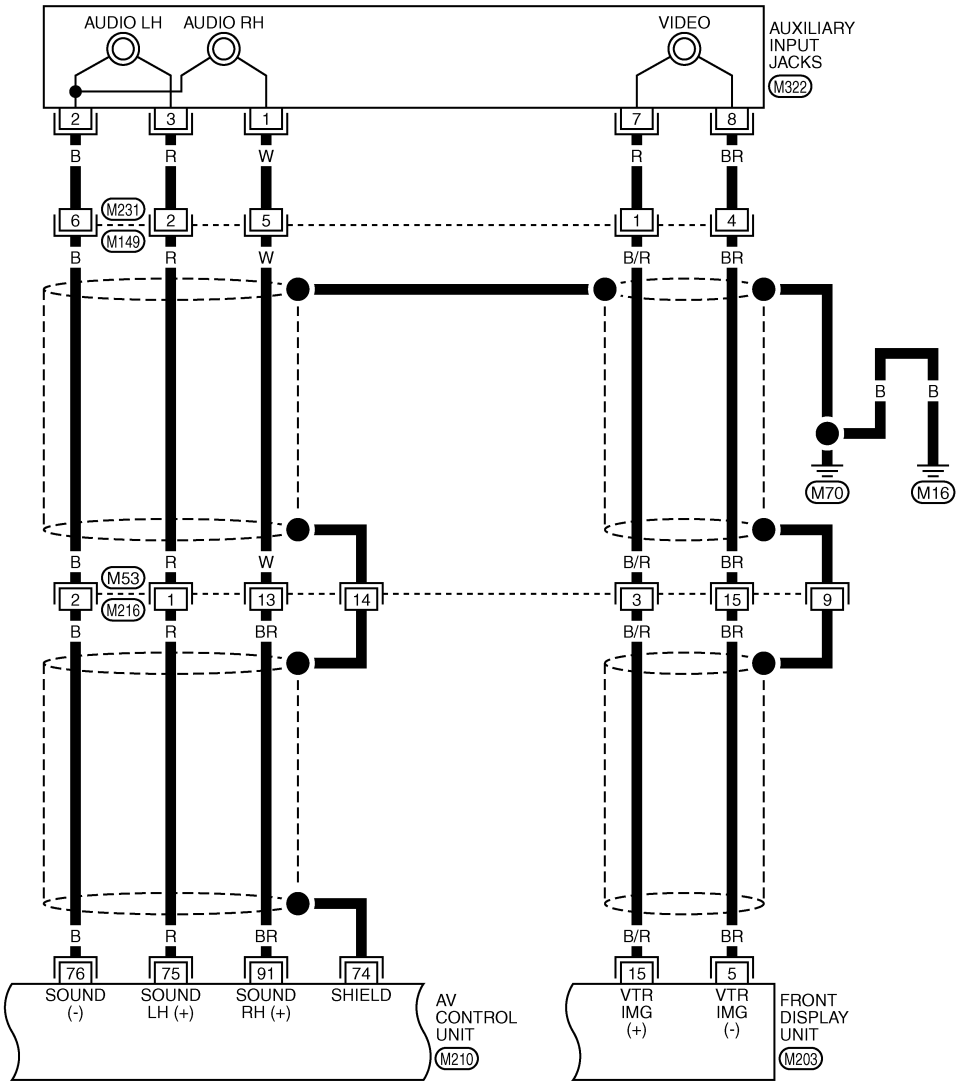
AV-AV-20

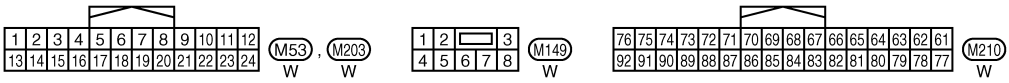


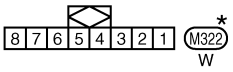


TKWT6695E

AV-AV-21



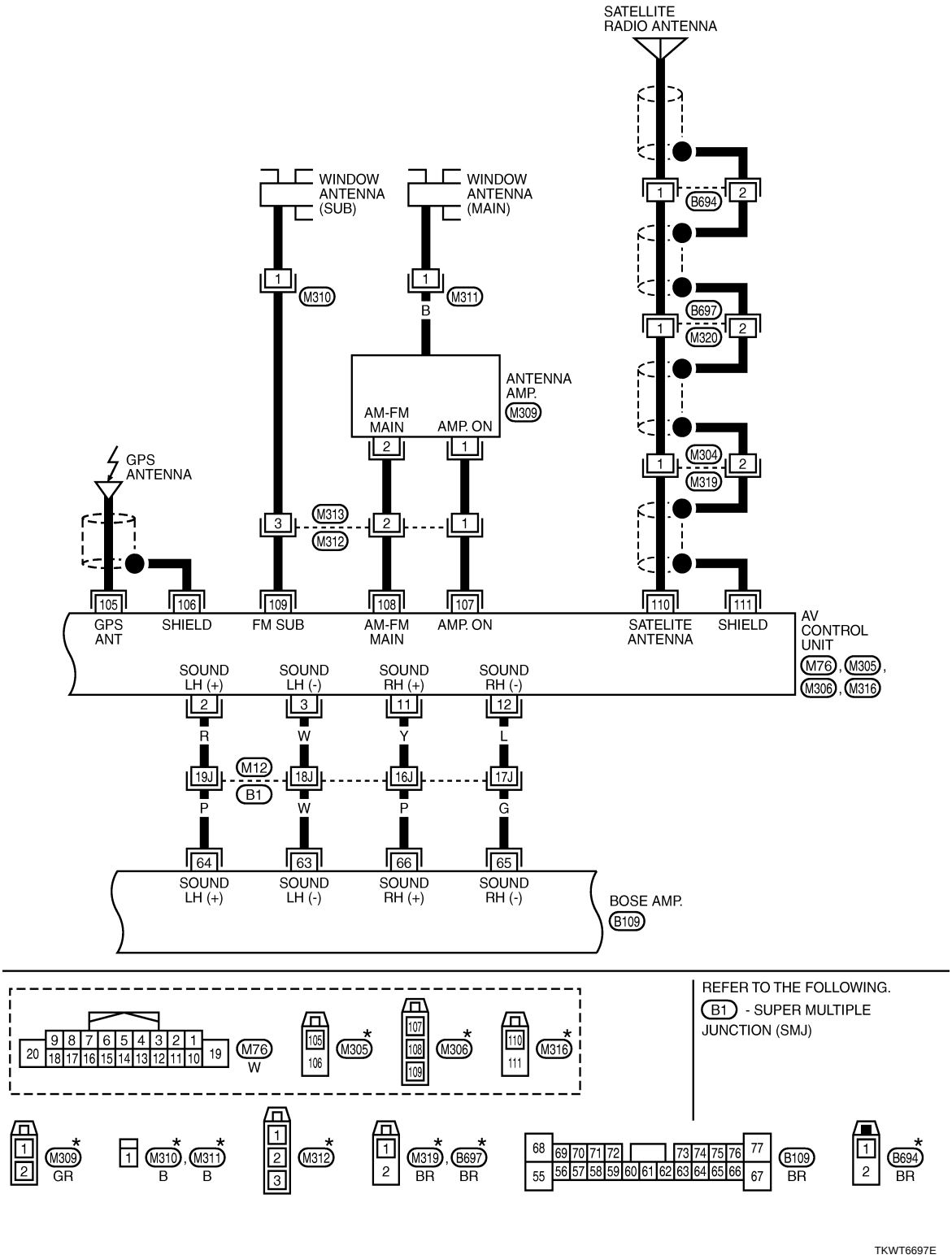




*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

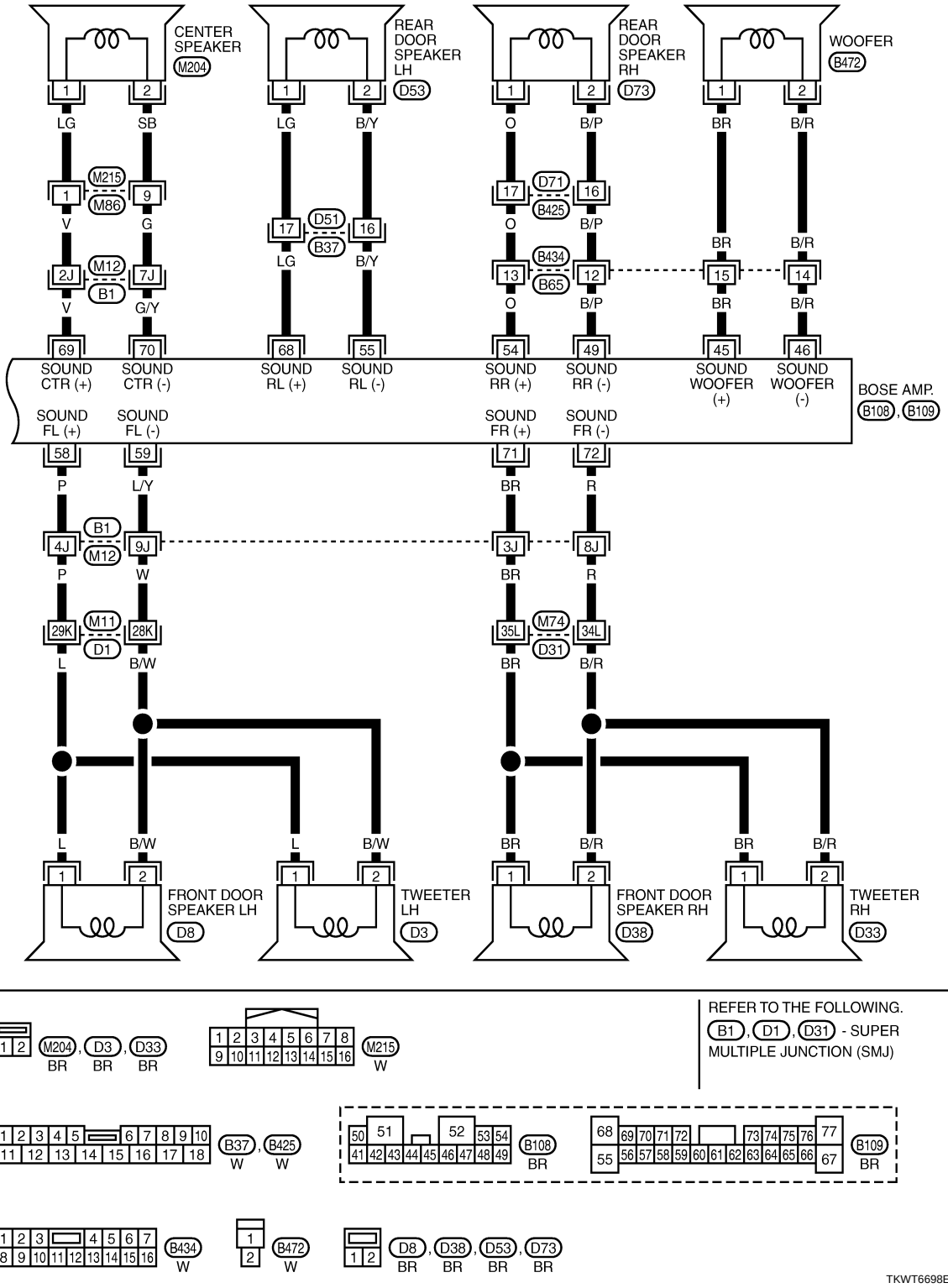
TKWT8277E

AV-AV-22

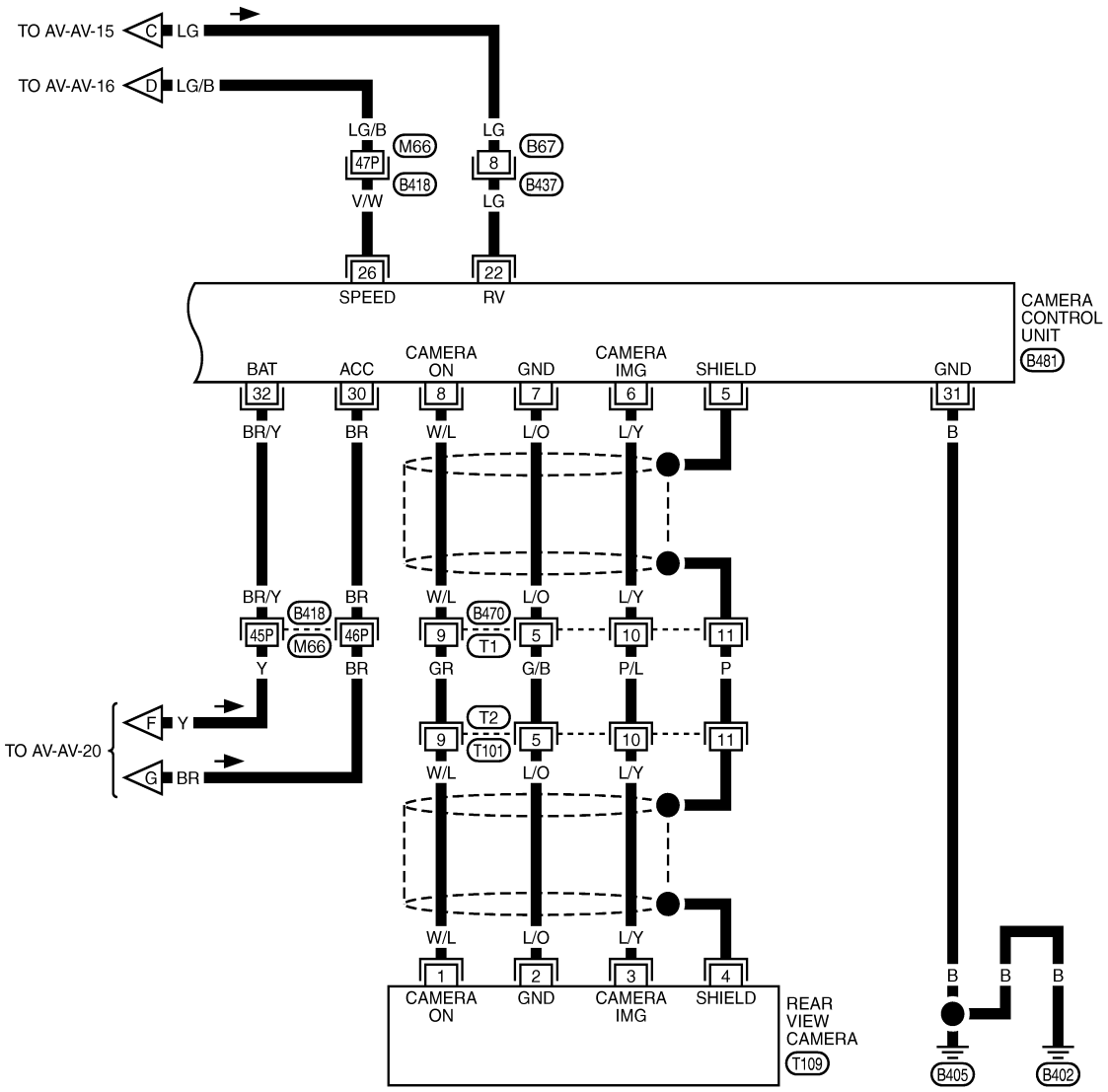


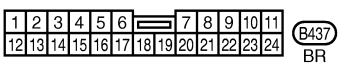
TKWT6697E

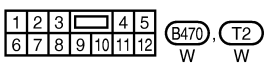
AV-AV-23

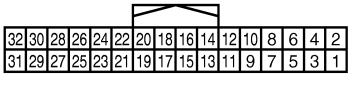

CENTER SPEAKER M204
REAR DOOR SPEAKER LH D53
REAR DOOR SPEAKER RH D73
WOOFER B472
BOSE AMP. B108, B109
SOUND CTR (+)
SOUND CTR (-)
SOUND RL (+)
SOUND RL (-)
SOUND RR (+)
SOUND RR (-)
SOUND WOOFER (+)
SOUND WOOFER (-)
SOUND FL (+)
SOUND FL (-)
SOUND FR (+)
SOUND FR (-)
FRONT DOOR SPEAKER LH D8
TWEETER LH D3
FRONT DOOR SPEAKER RH D38
TWEETER RH D33
M215
M86
D71
B425
D51
B37
B434
B65
M12
B1
M11
D1
M74
D31
REFER TO THE FOLLOWING.
B1, D1, D31 - SUPER MULTIPLE JUNCTION (SMJ)
M204, D3, D33
M215
B37, B425
B108
B109
B434
B472
D8, D38, D53, D73
TKWT6698E

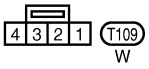
AV-AV-24









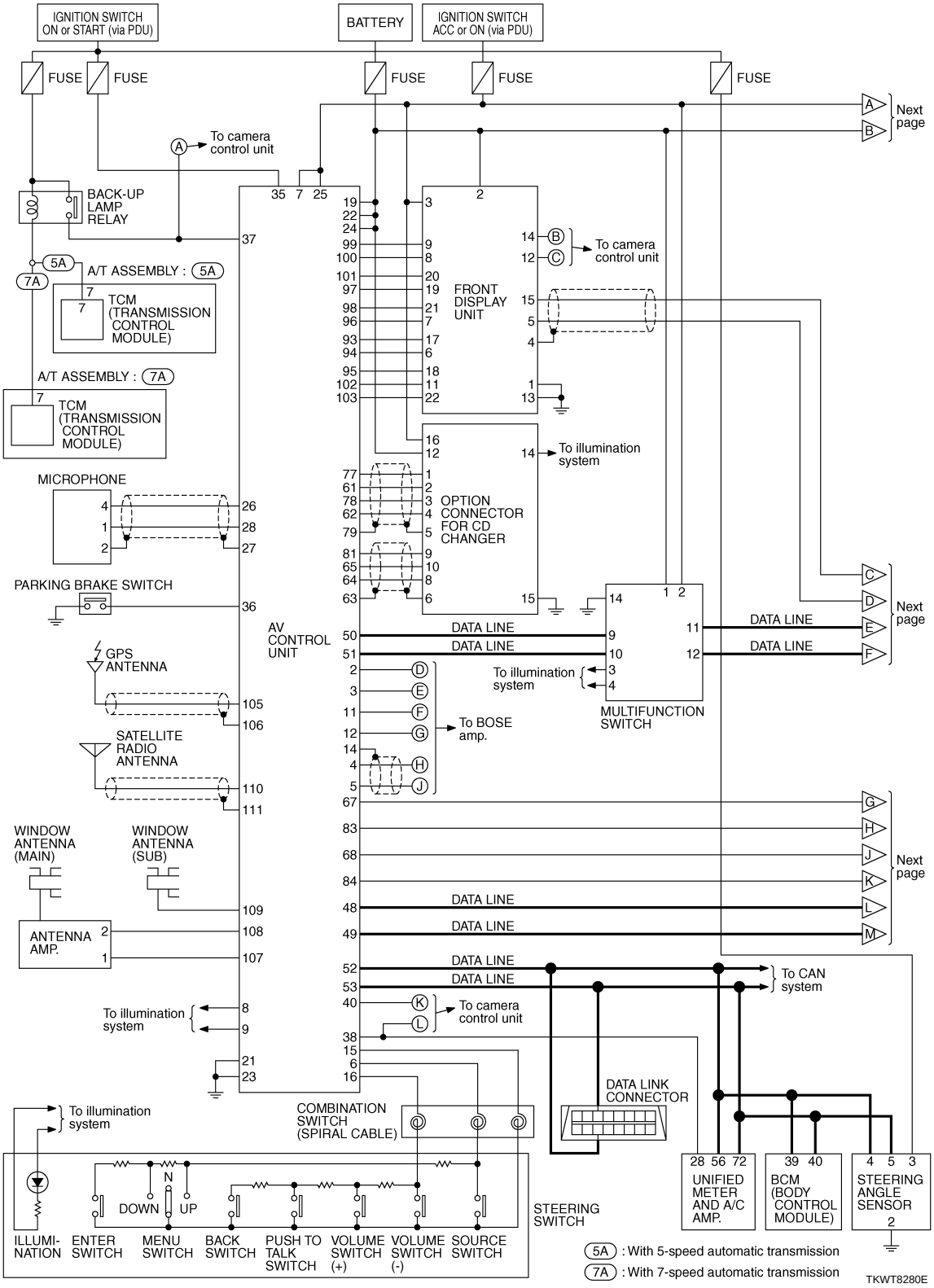


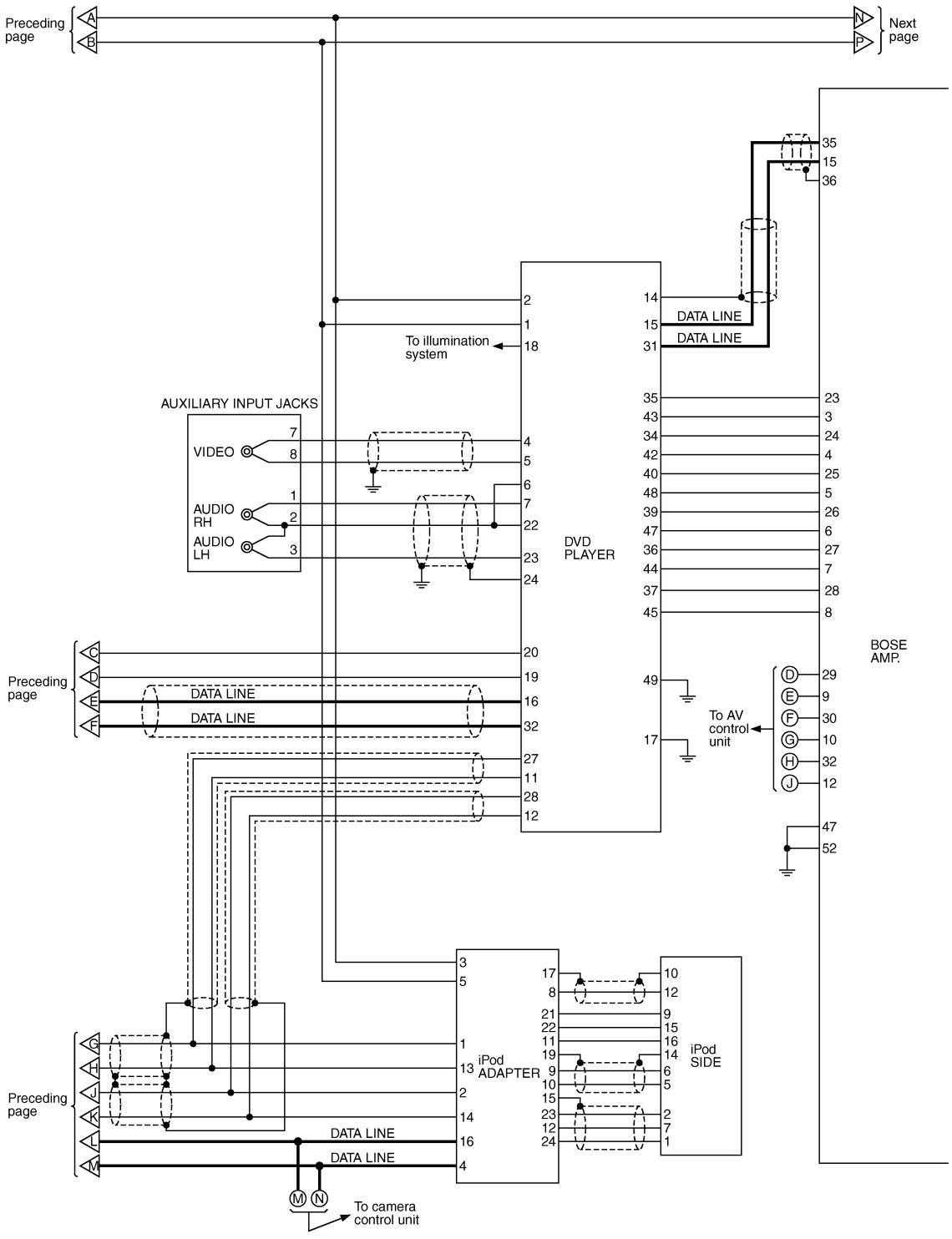
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

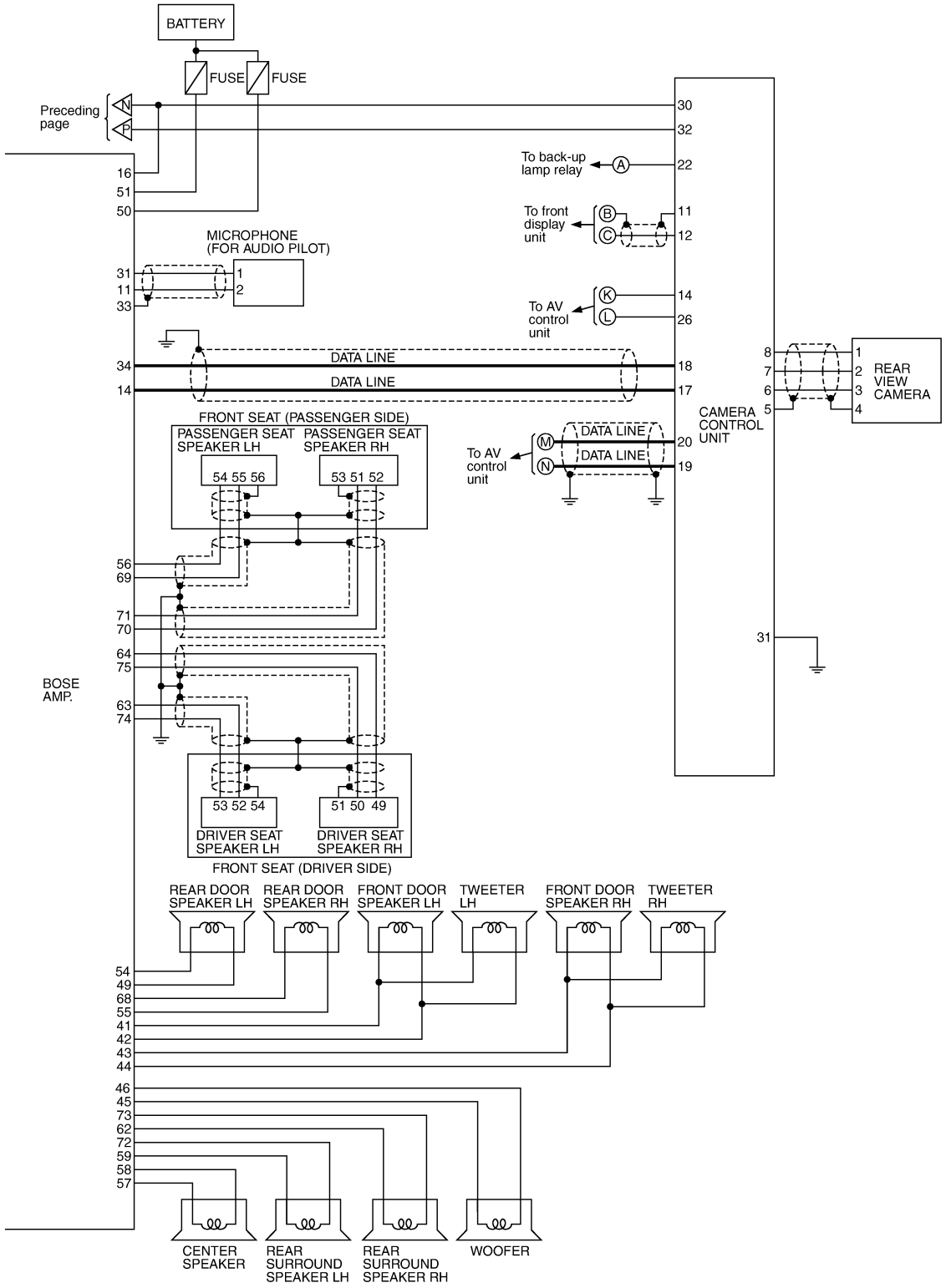
TKWT6699E

Schematic - BOSE Surround Audio 5.1ch System -

INFOID:0000000004380462




Preceding page
A
B
Next page
N
P
AUXILIARY INPUT JACKS
VIDEO
AUDIO RH
AUDIO LH
To illumination system
DVD PLAYER
DATA LINE
DATA LINE
BOSE AMP.
To AV control unit
Preceding page
DATA LINE
DATA LINE
iPod ADAPTER
iPod SIDE
Preceding page
DATA LINE
DATA LINE
To camera control unit
TKWT6701E



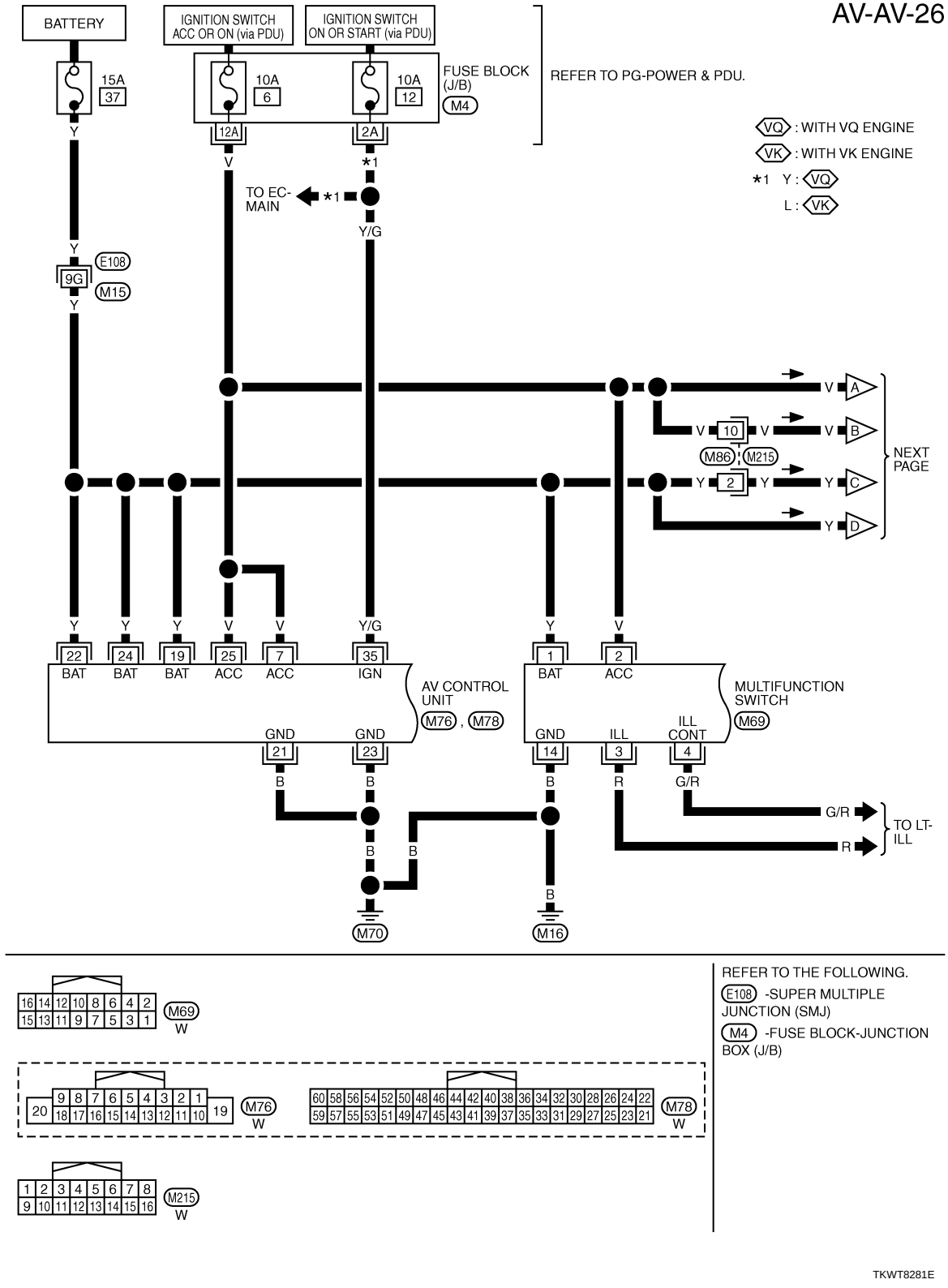
TKWT6702E

Wiring Diagram - AV - / BOSE Surround Audio 5.1ch System

INFOID:0000000004380463

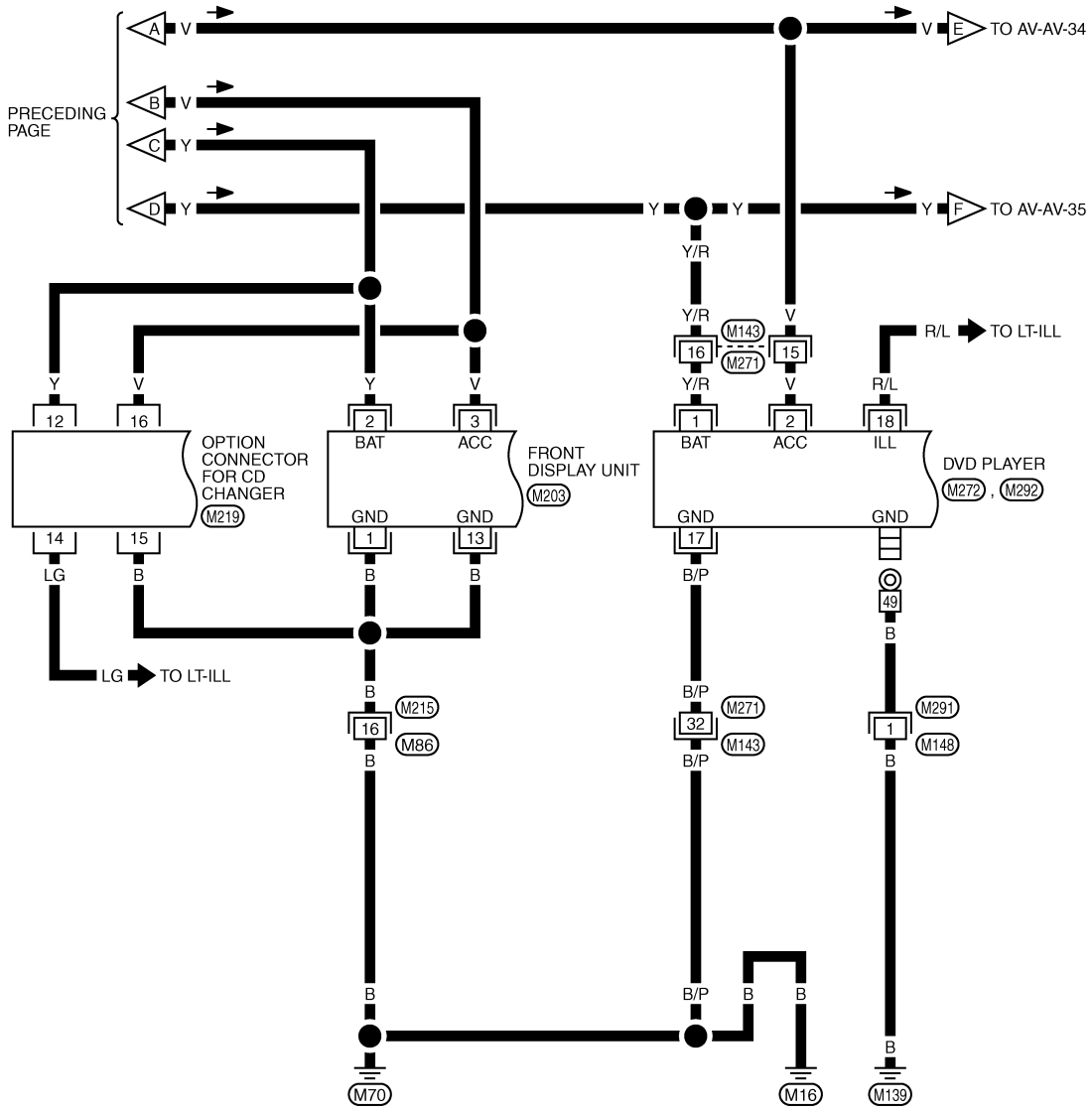
NOTE:

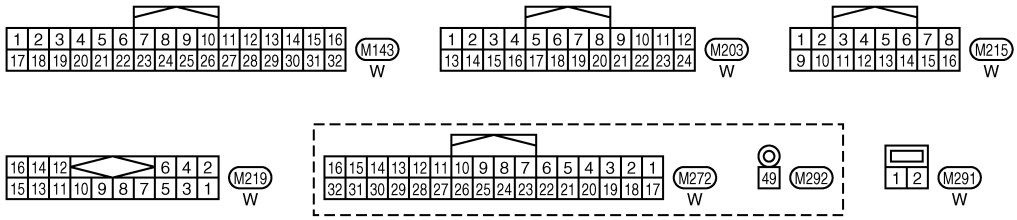
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.



TKWT8281E

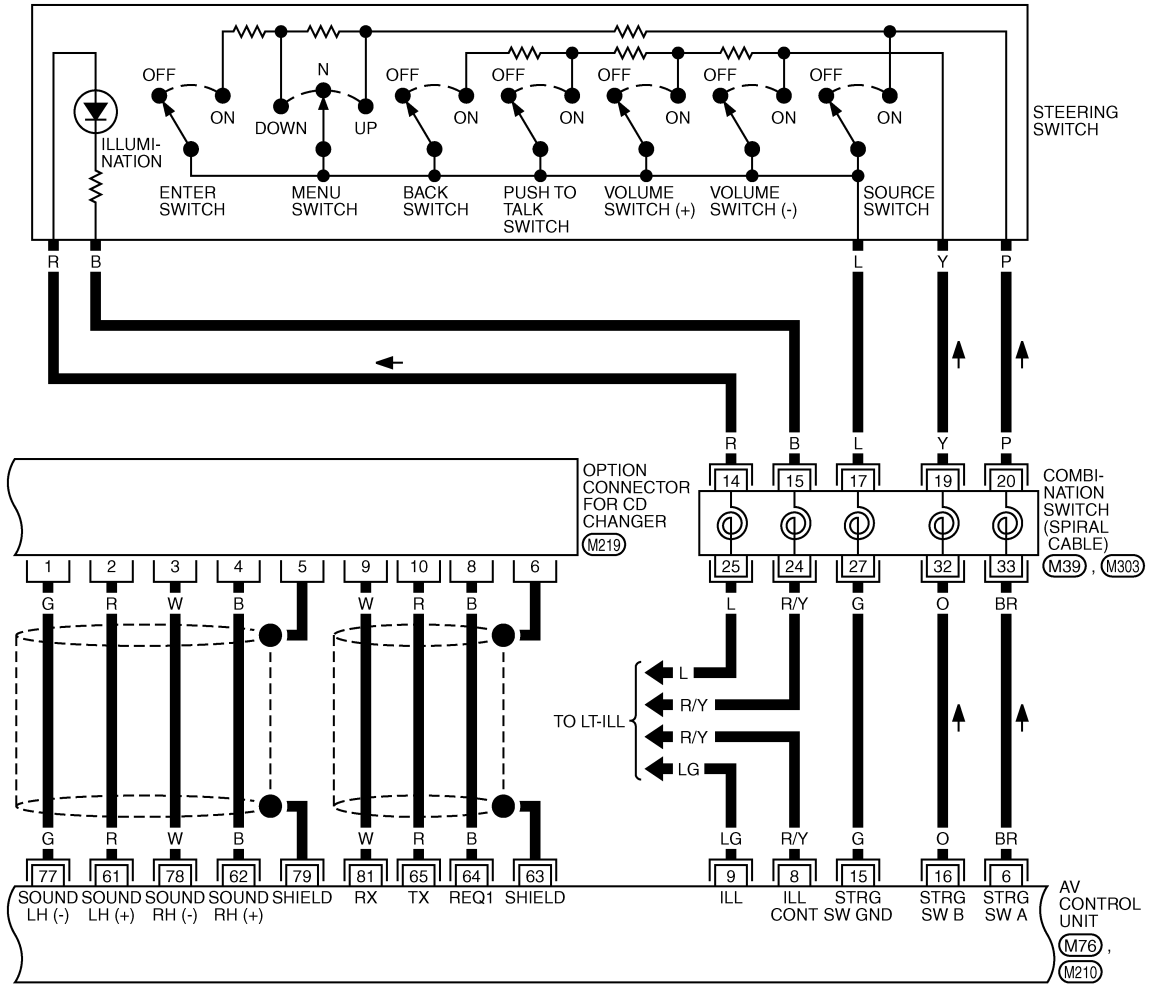
AV-AV-27

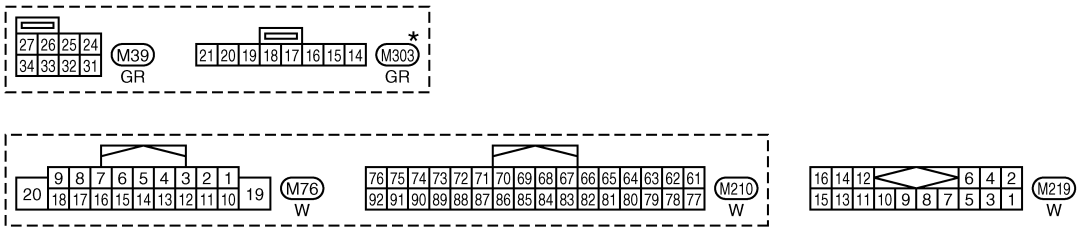




TKWT8282E

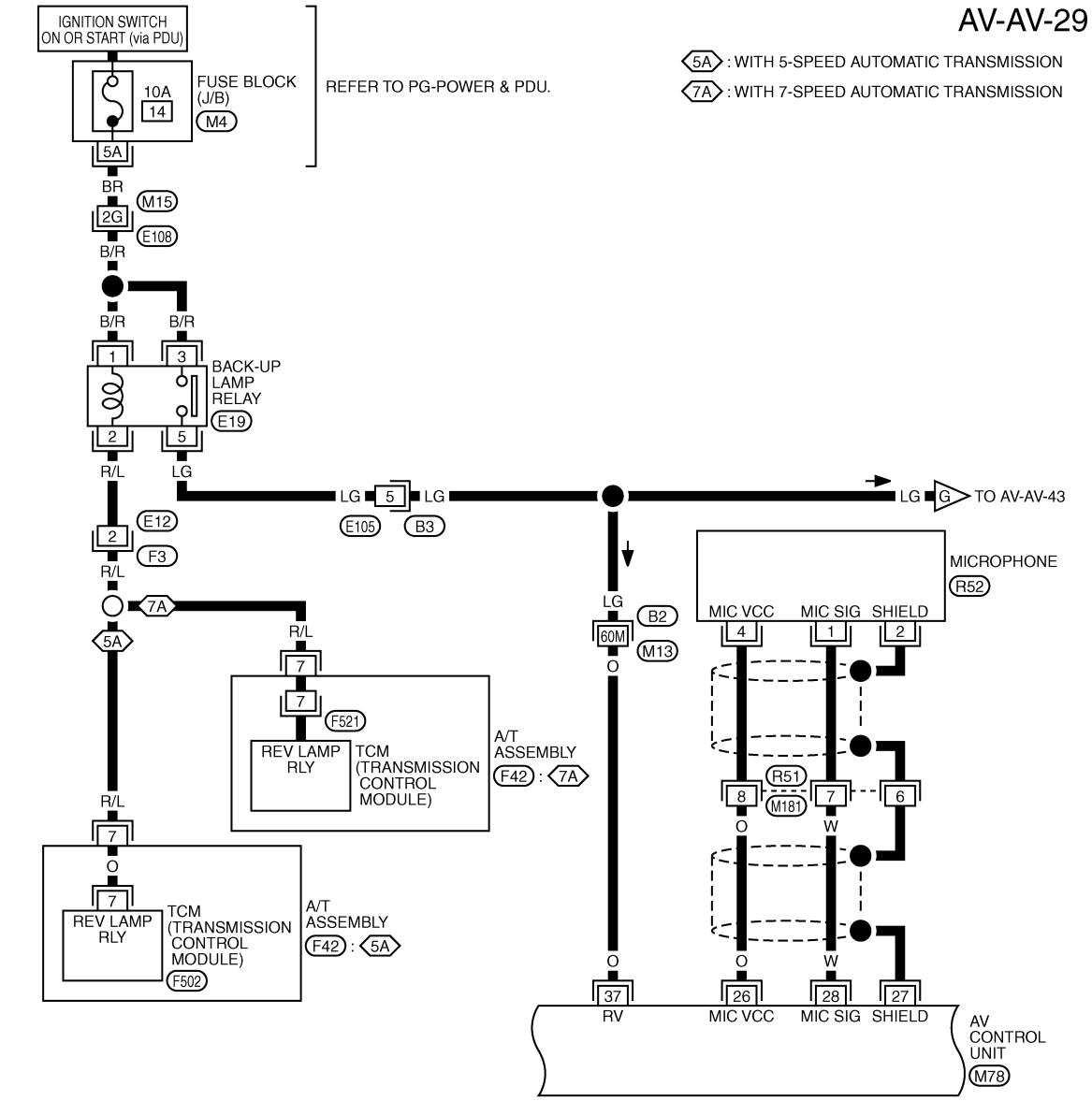
AV-AV-28





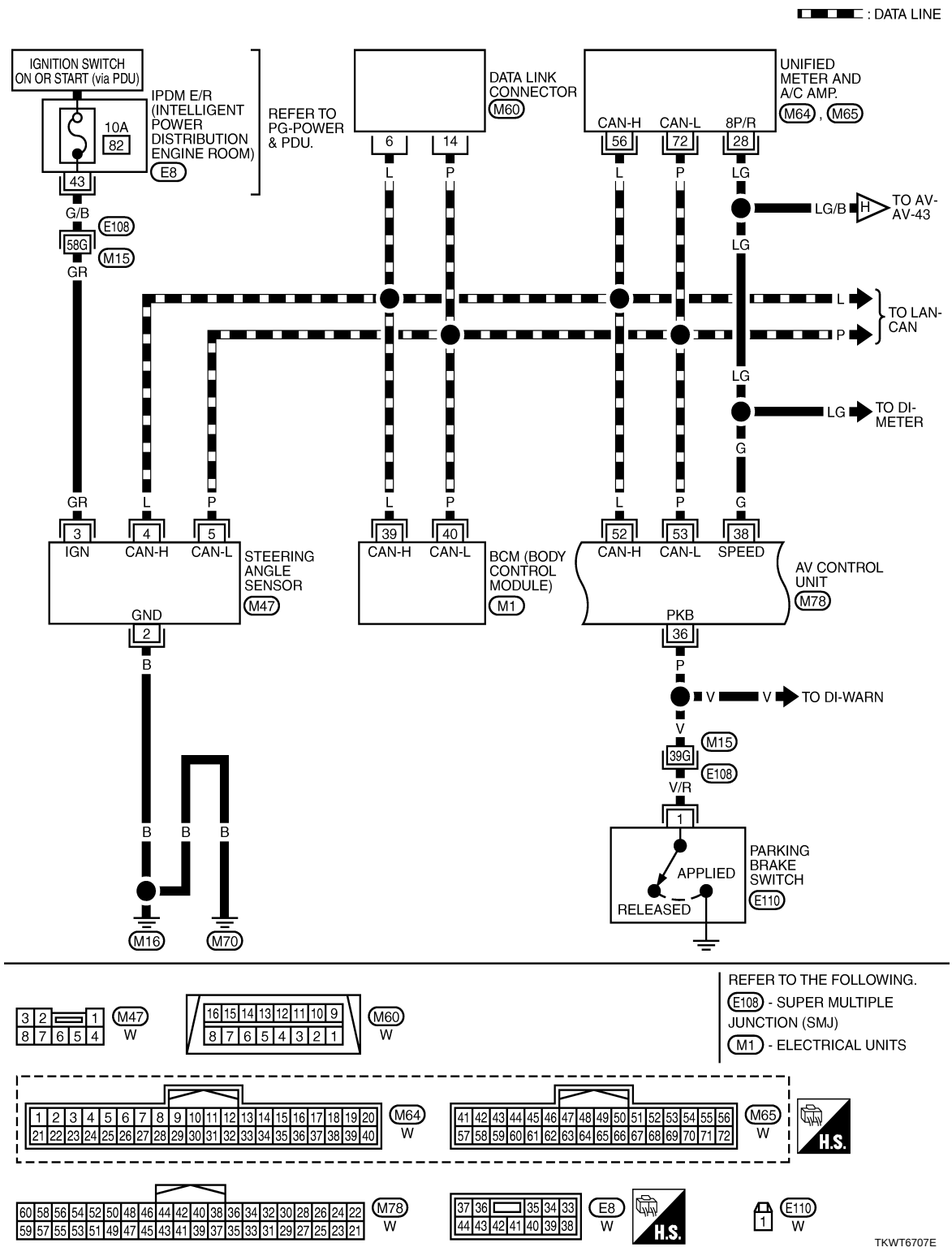
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8283E

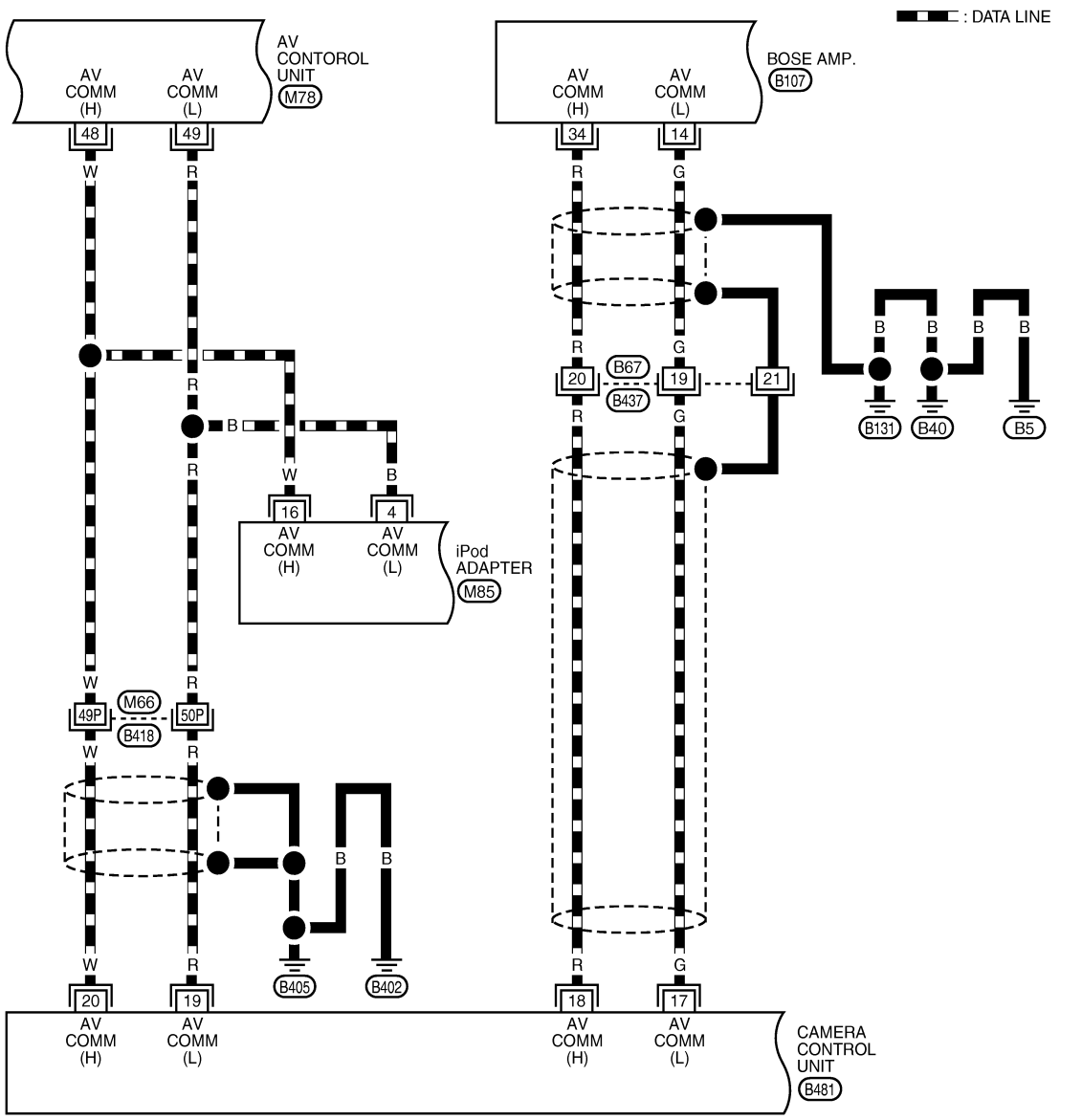

AV-AV-29
5A : WITH 5-SPEED AUTOMATIC TRANSMISSION
7A : WITH 7-SPEED AUTOMATIC TRANSMISSION
IGNITION SWITCH ON OR START (via PDU)
FUSE BLOCK (J/B) M4
10A 14
5A
REFER TO PG-POWER & PDU.
BR
M15
2G
E108
B/R
BACK-UP LAMP RELAY E19
R/L
LG
E12
F3
E105
B3
TO AV-AV-43
MICROPHONE R52
MIC VCC
MIC SIG
SHIELD
B2
60M
M13
R51
M181
7A
REV LAMP RLY
TCM (TRANSMISSION CONTROL MODULE)
F521
A/T ASSEMBLY F42 : 7A
F502
A/T ASSEMBLY F42 : 5A
RV
AV CONTROL UNIT M78
M78
W
E19
L
F3
B
F42
G
F502
GR
F521
G
B3
W
R51
W
R52
W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

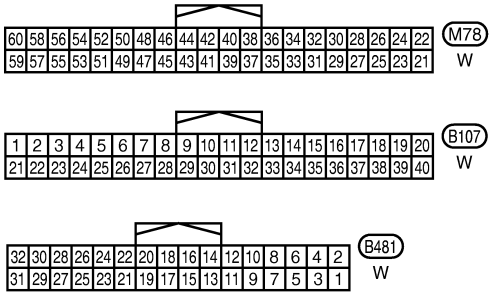
TKWT8284E

AV-AV-30


: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM)
E8
10A
82
43
REFER TO PG-POWER & PDU.
G/B
E108
58G
M15
GR
DATA LINK CONNECTOR
M60
6
14
UNIFIED METER AND A/C AMP.
M64, M65
CAN-H
CAN-L
8P/R
56
72
28
L
P
LG
LG/B
H
TO AV-AV-43
TO LAN-CAN
TO DI-METER
G
3
IGN
4
CAN-H
5
CAN-L
STEERING ANGLE SENSOR
M47
GND
2
B
39
CAN-H
40
CAN-L
BCM (BODY CONTROL MODULE)
M1
52
CAN-H
53
CAN-L
38
SPEED
AV CONTROL UNIT
M78
PKB
36
V
TO DI-WARN
39G
M15
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH
E110
M16
M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47
W
M60
W
M64
W
M65
W
H.S.
M78
W
E8
W
E110
W
TKWT6707E

AV-AV-31

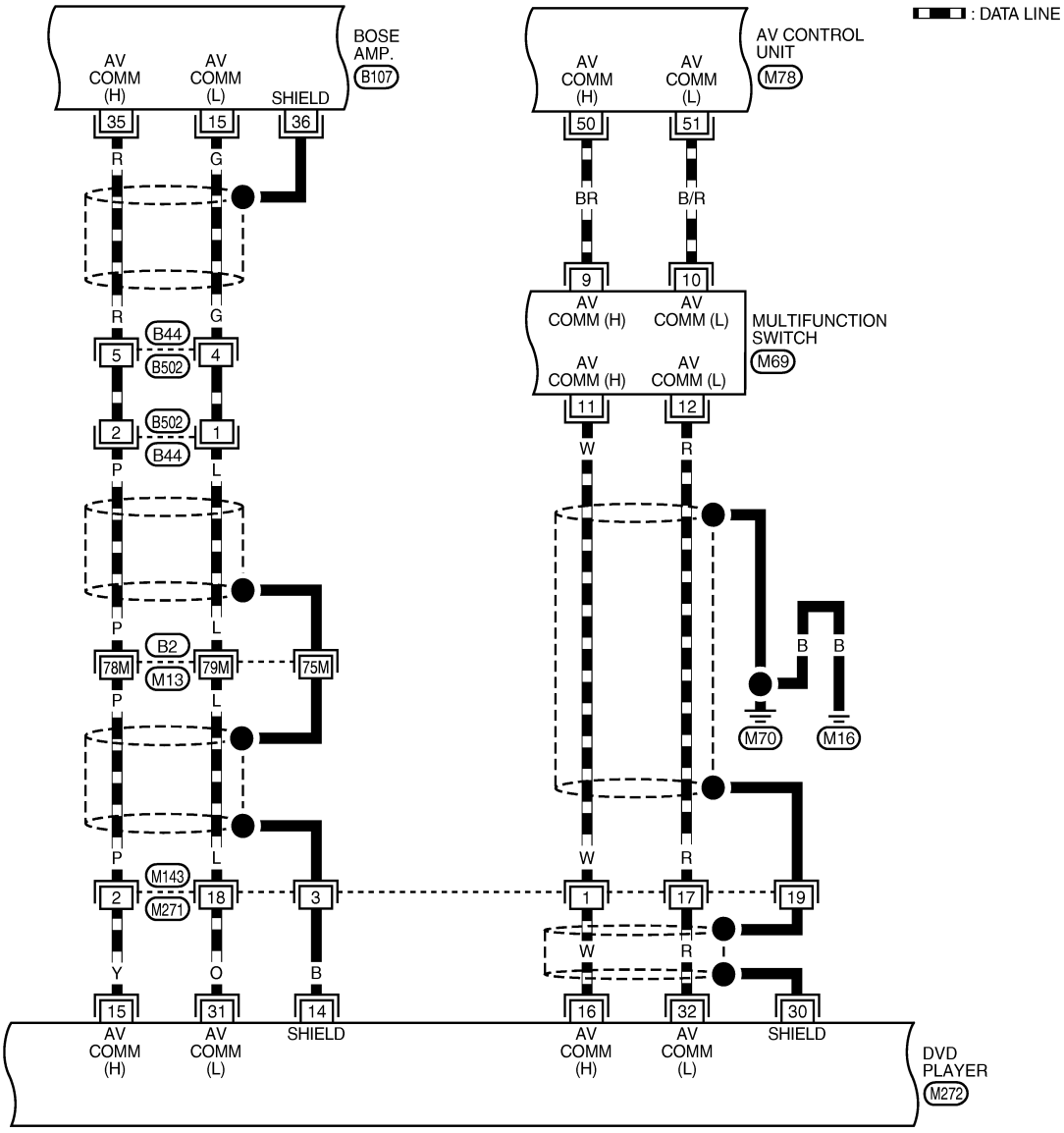


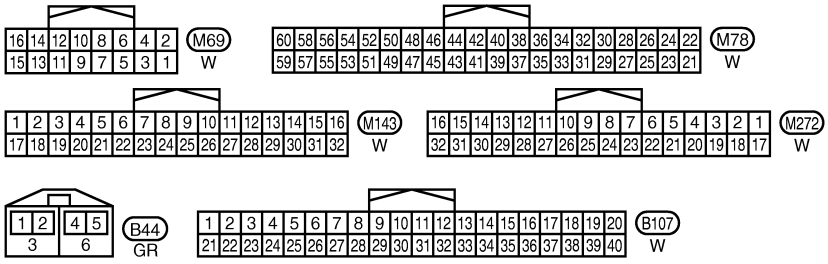


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6708E

AV-AV-32

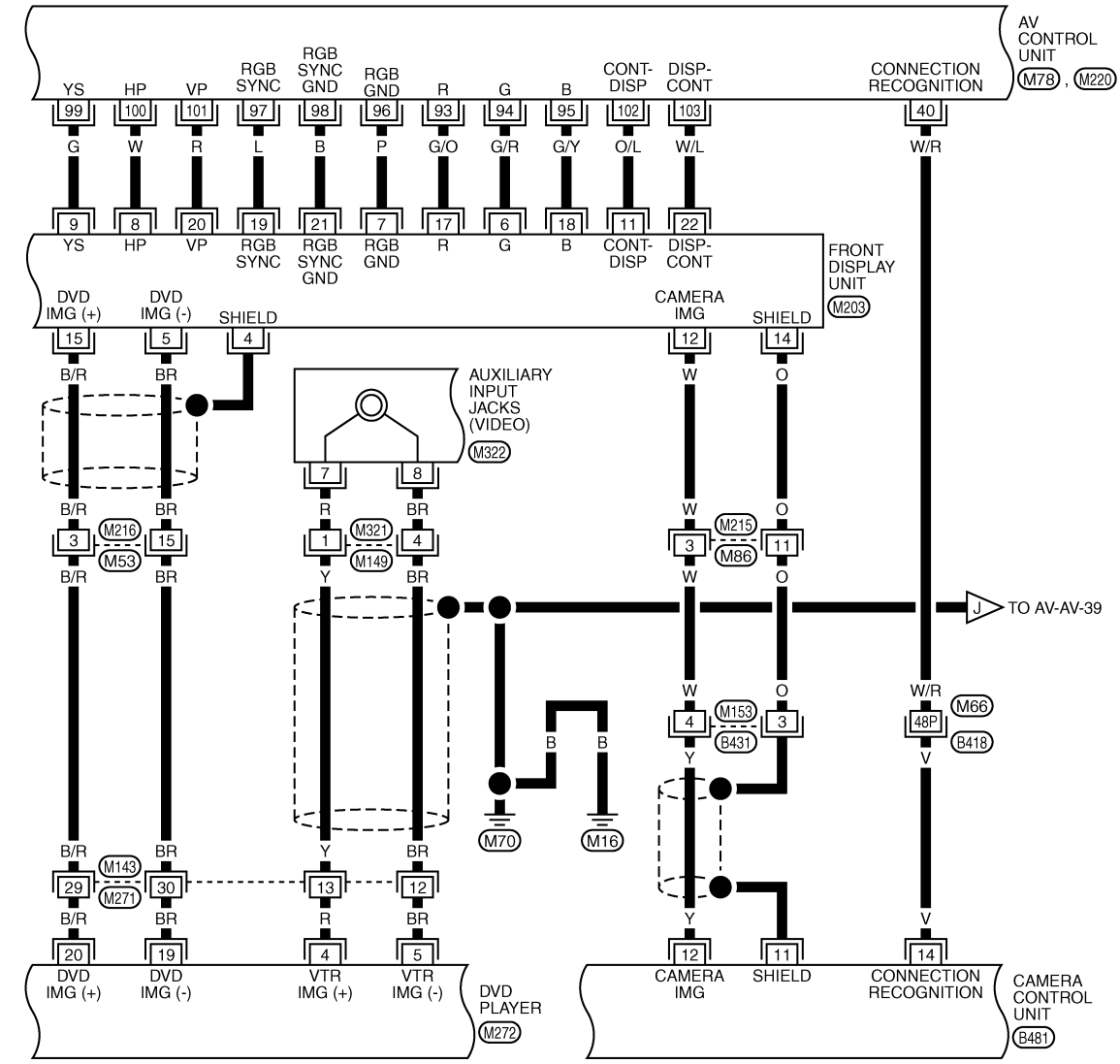




REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

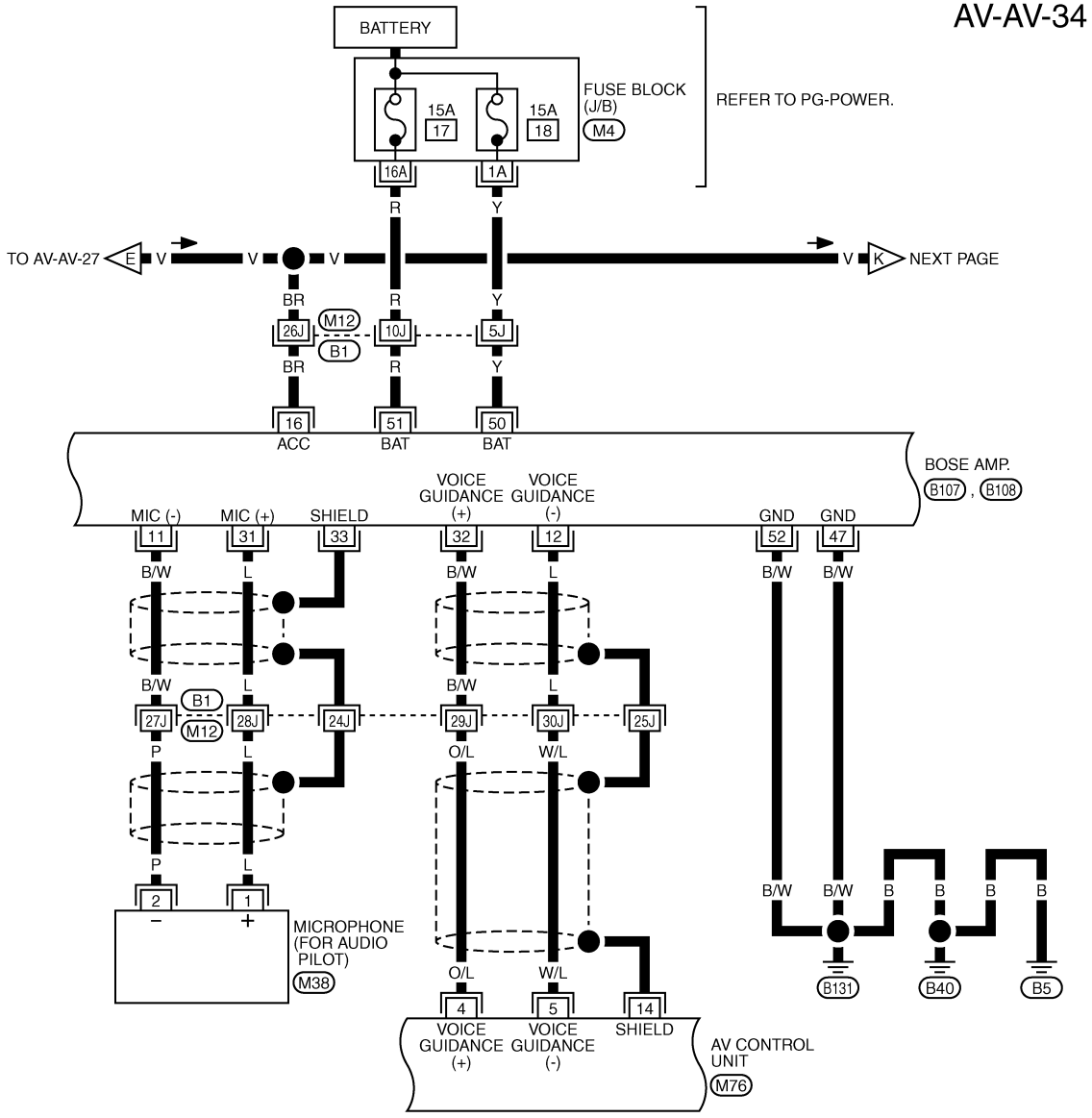
TKWT6709E

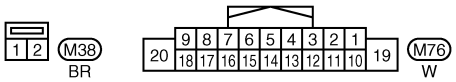
AV-AV-33

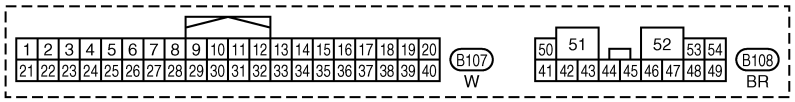


TKWT8285E

AV-AV-34

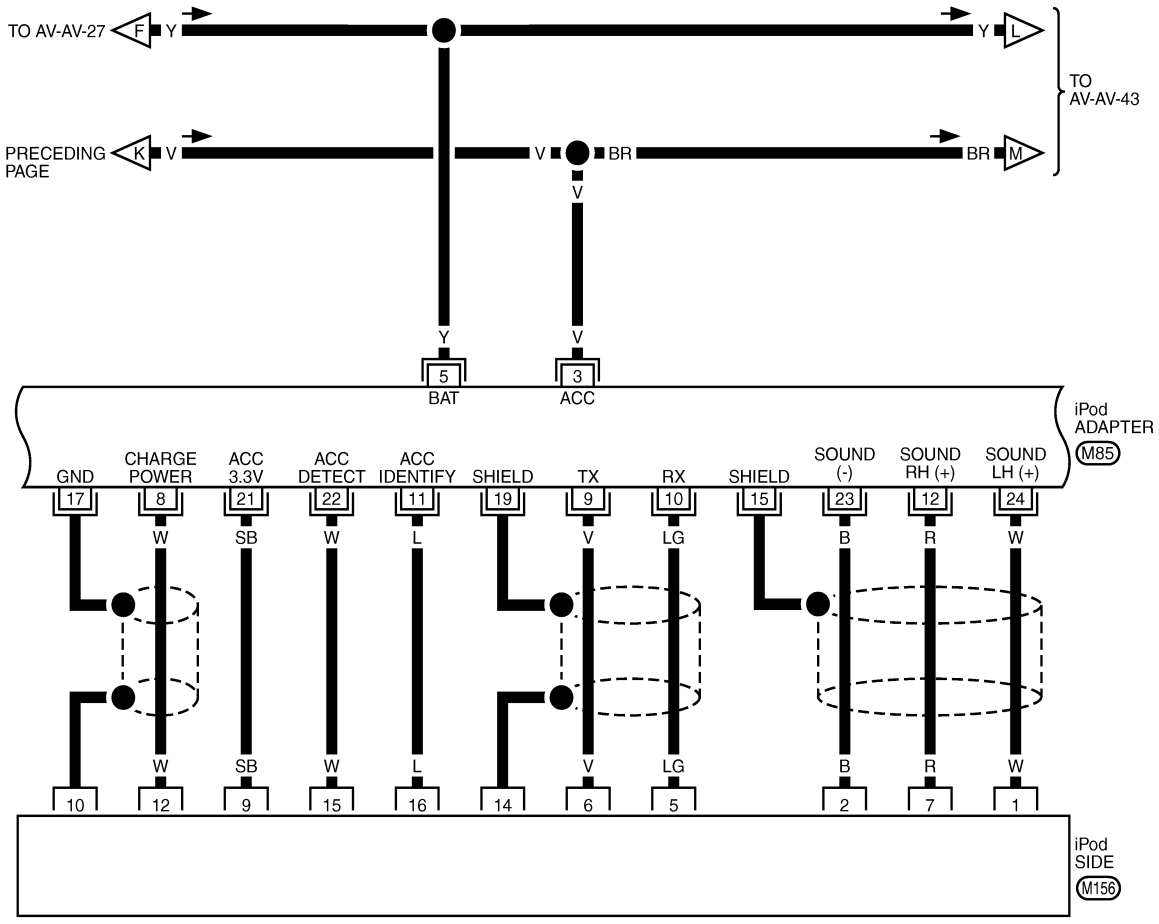


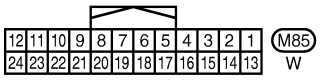


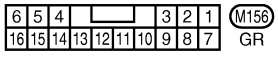


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8286E

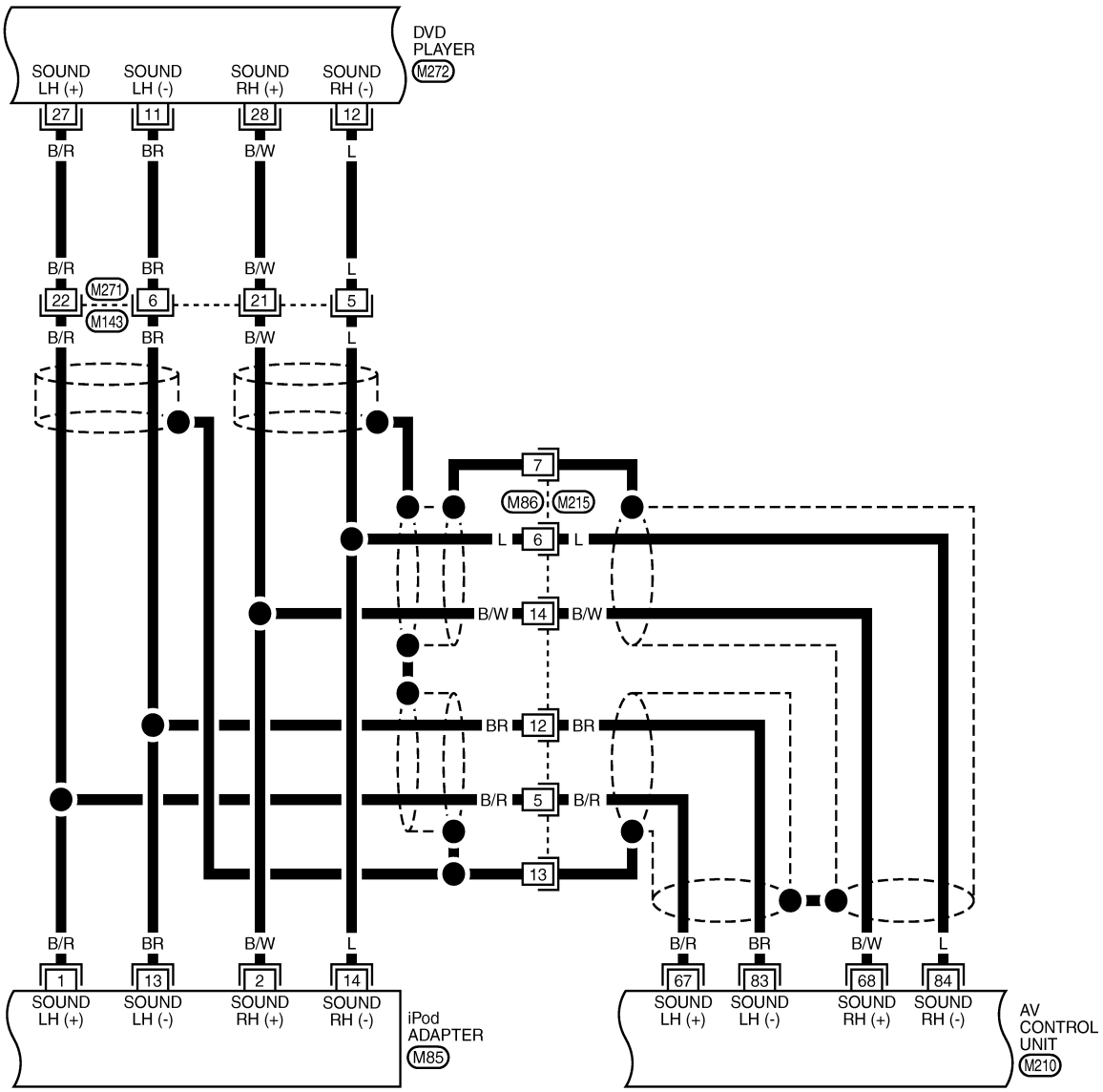

TO AV-AV-27
F
Y
Y
L
TO
AV-AV-43
PRECEDING
PAGE
K
V
V
BR
BR
M
V
Y
V
5
BAT
3
ACC
iPod
ADAPTER
M85
GND
CHARGE
POWER
ACC
3.3V
ACC
DETECT
ACC
IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND
(-)
SOUND
RH (+)
SOUND
LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod
SIDE
M156

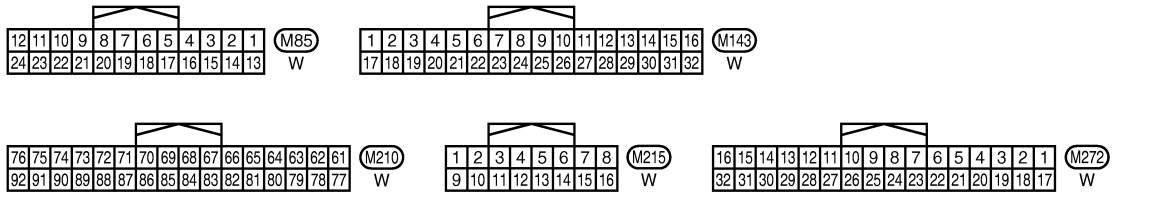

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6713E

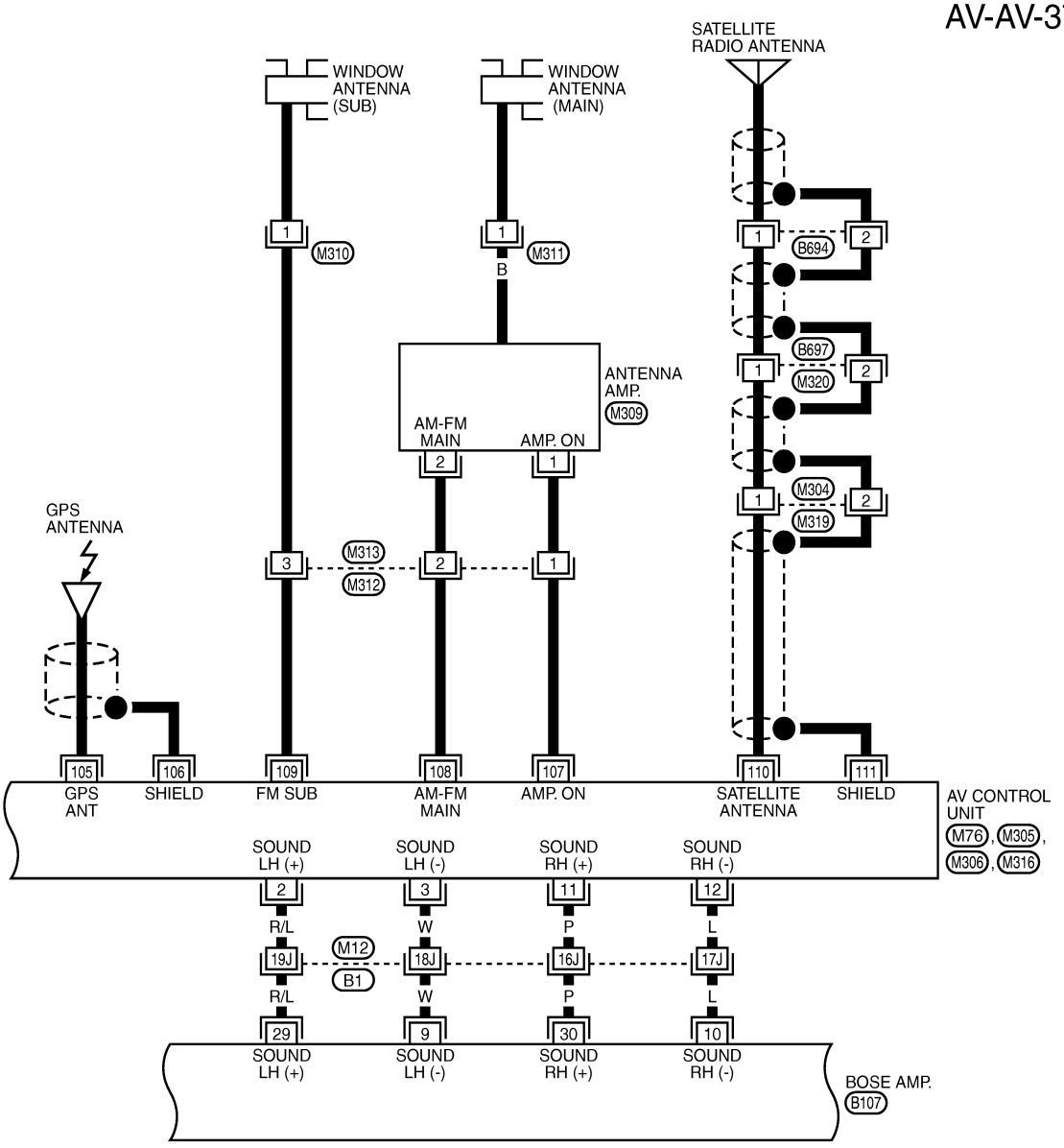
AV-AV-36

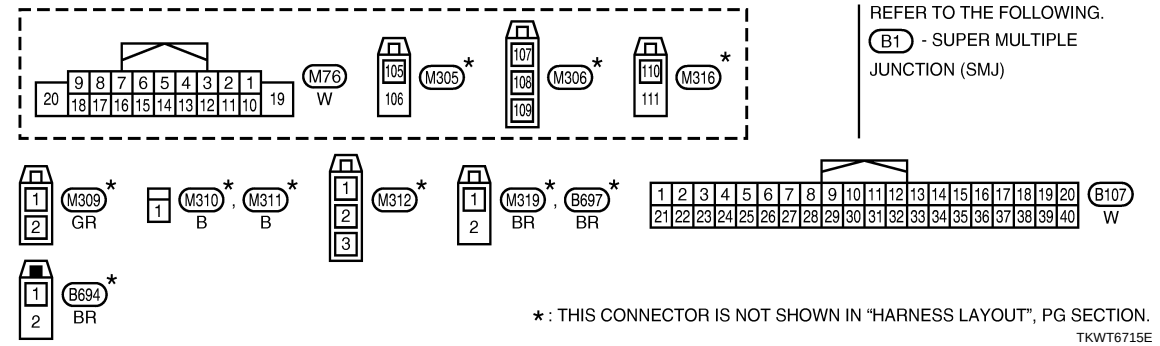




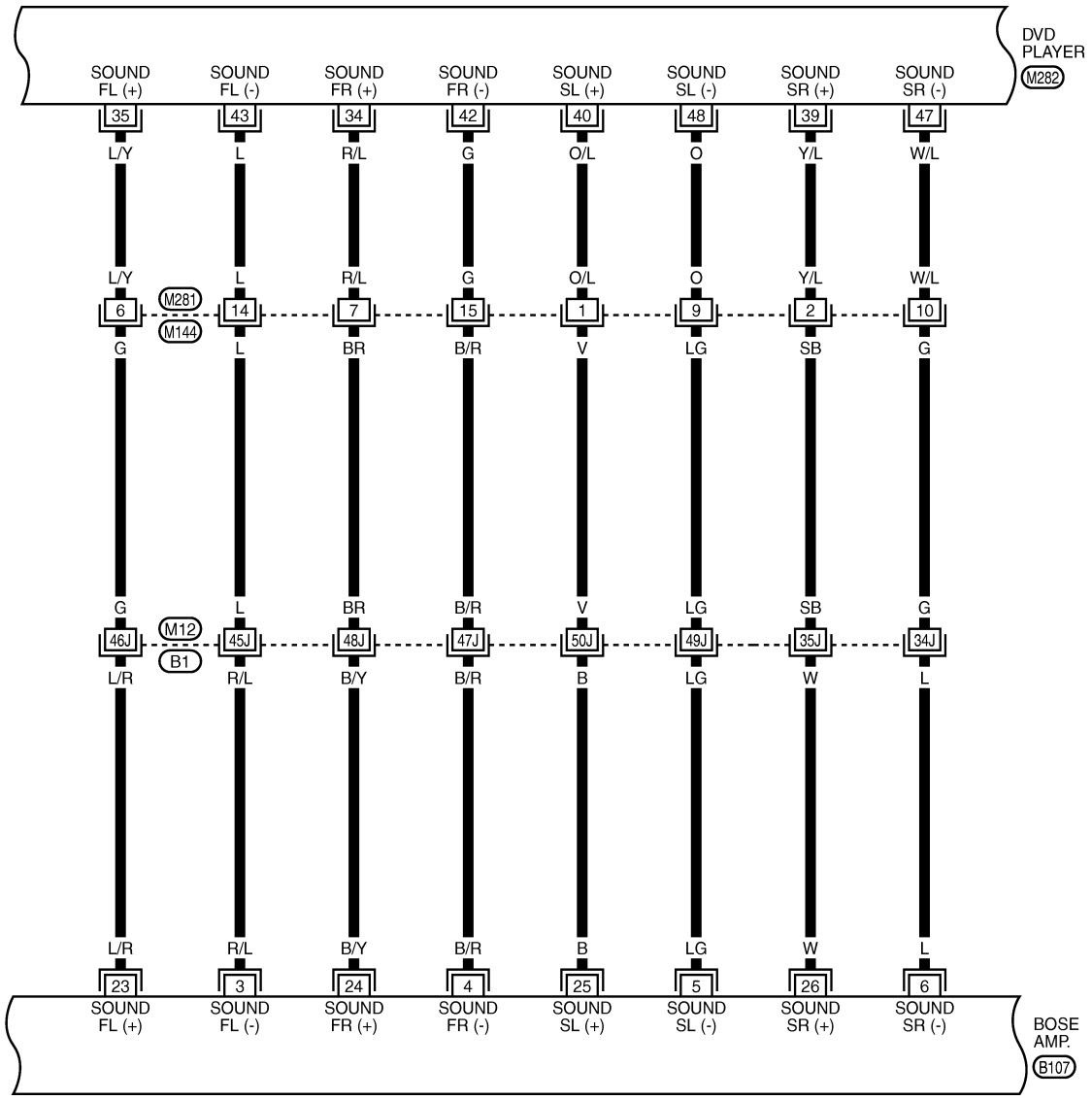
TKWT6714E

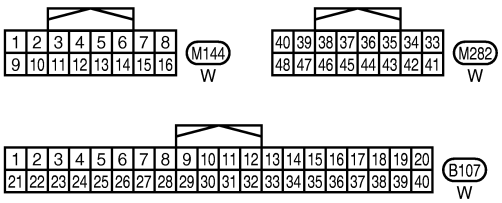
AV-AV-37


SATELLITE RADIO ANTENNA
WINDOW ANTENNA (SUB)
WINDOW ANTENNA (MAIN)
M310
M311
B
B694
B697
M320
M304
M319
ANTENNA AMP.
M309
AM-FM MAIN
AMP. ON
GPS ANTENNA
M313
M312
105 GPS ANT
106 SHIELD
109 FM SUB
108 AM-FM MAIN
107 AMP. ON
110 SATELLITE ANTENNA
111 SHIELD
AV CONTROL UNIT
M76, M305, M306, M316
SOUND LH (+)
SOUND LH (-)
SOUND RH (+)
SOUND RH (-)
R/L
W
P
L
M12
B1
19J
18J
16J
17J
29 SOUND LH (+)
9 SOUND LH (-)
30 SOUND RH (+)
10 SOUND RH (-)
BOSE AMP.
B107


M76 W
M305*
M306*
M316*
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)
M309* GR
M310*, M311* B
M312*
M319*, B697* BR
B107 W
B694* BR
* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.
TKWT6715E

AV-AV-38

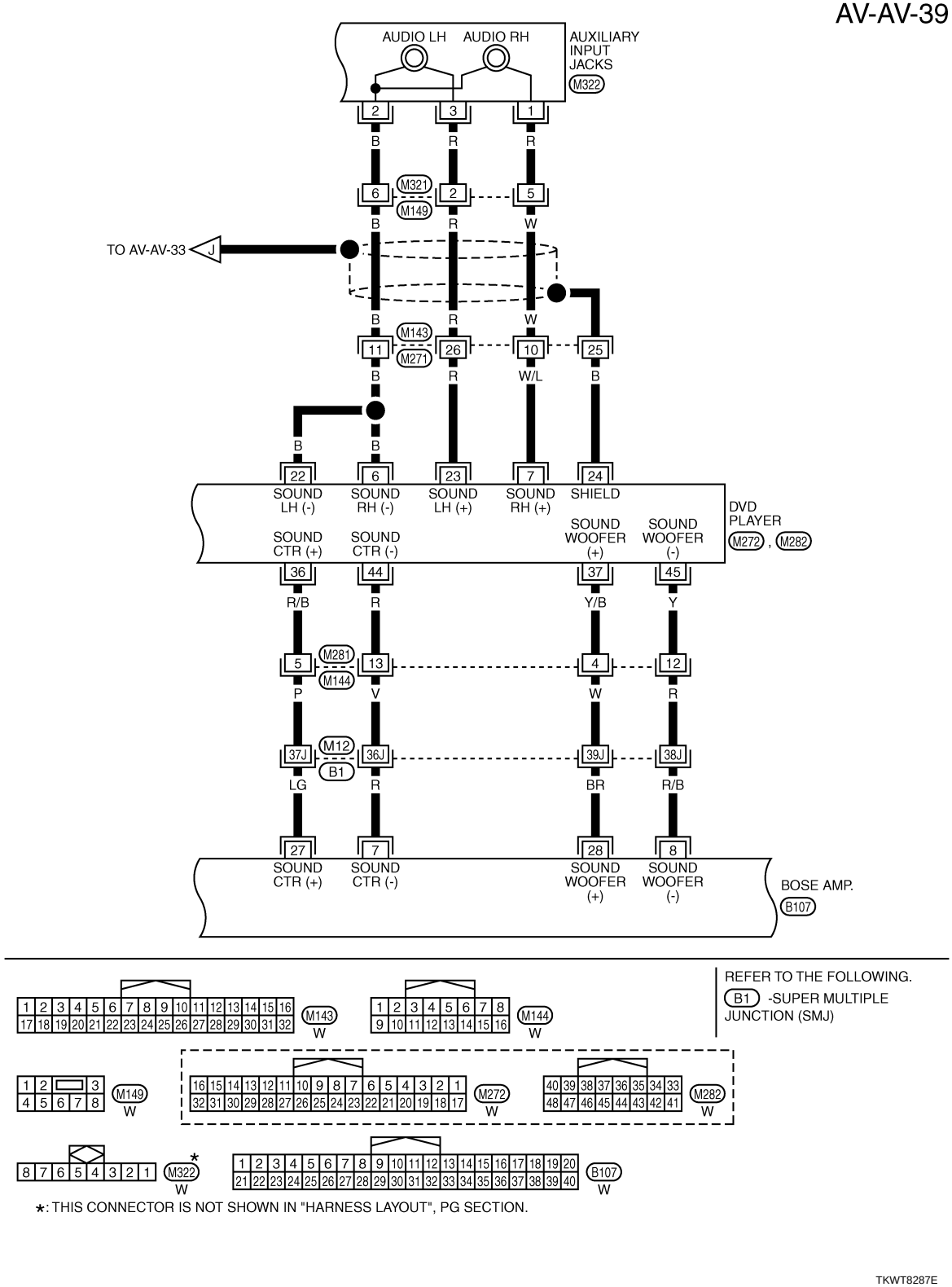




REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

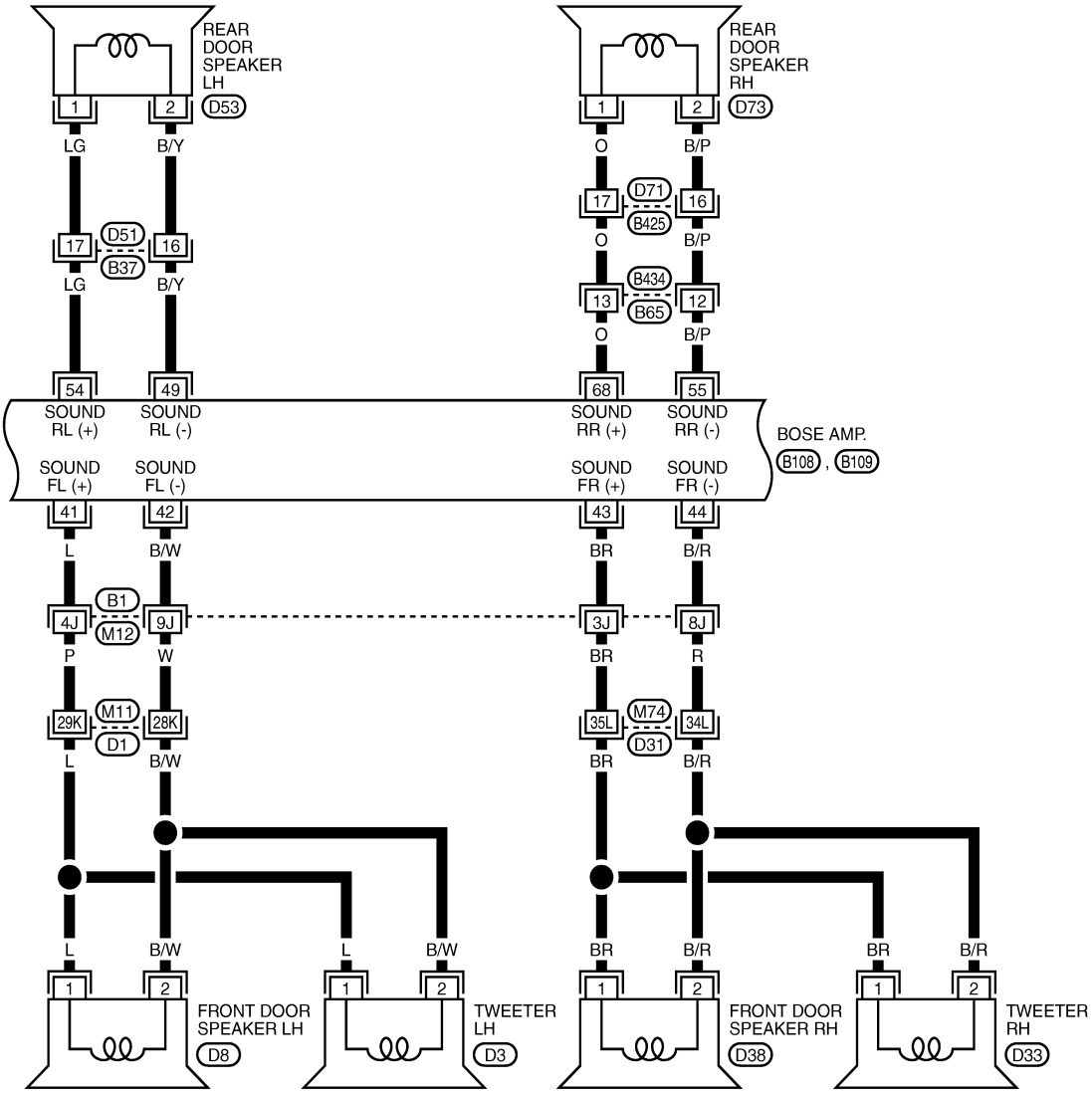
TKWT6716E

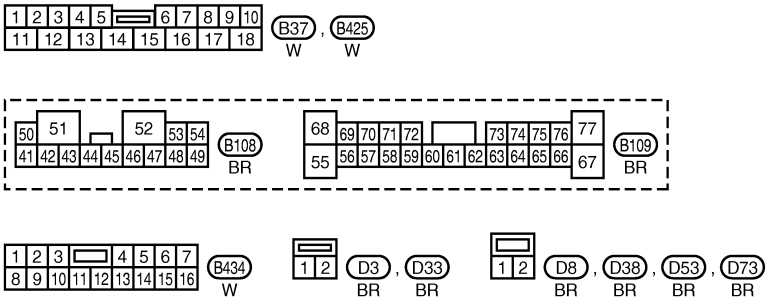
AV-AV-39



TKWT8287E

AV-AV-40

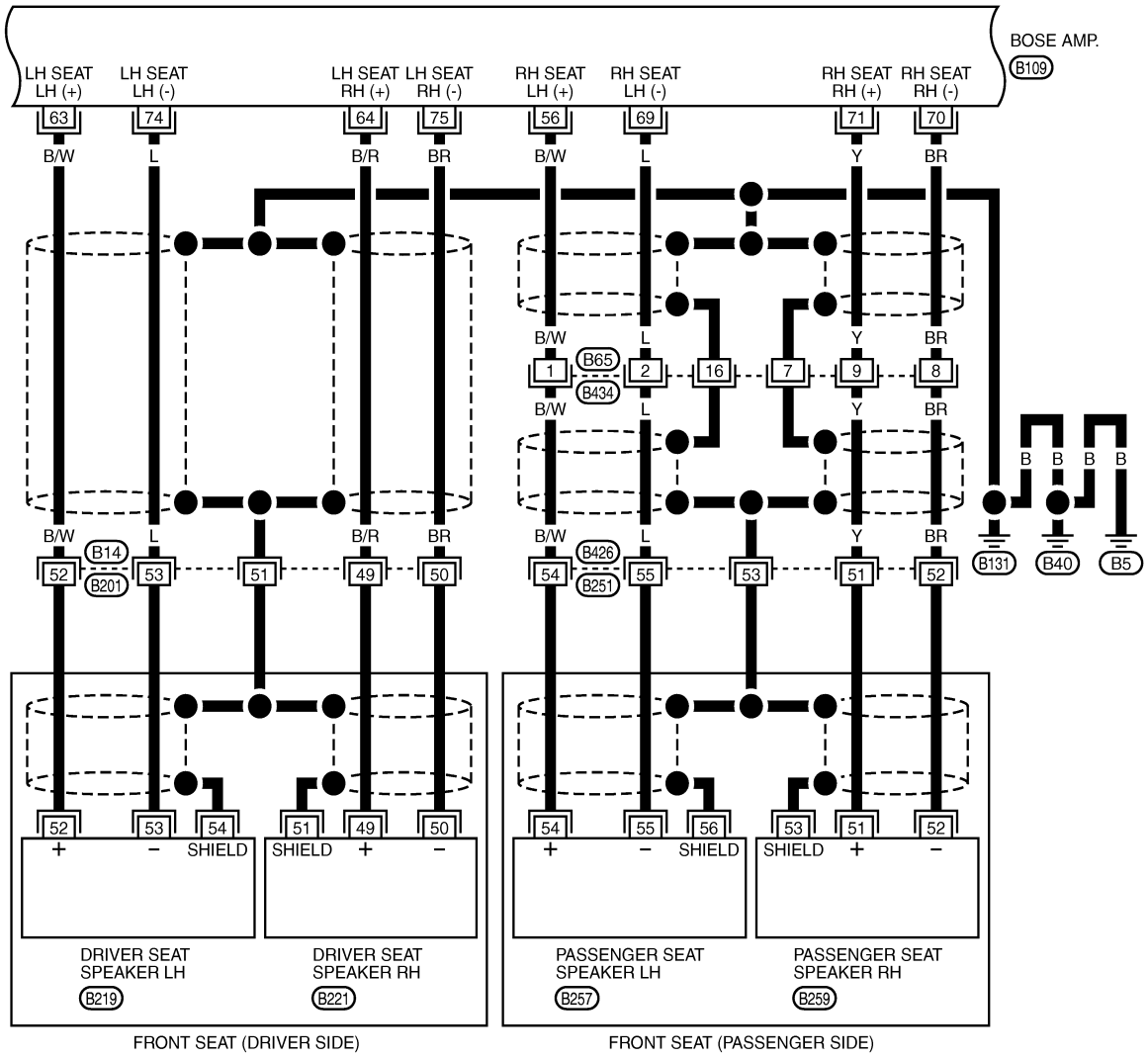


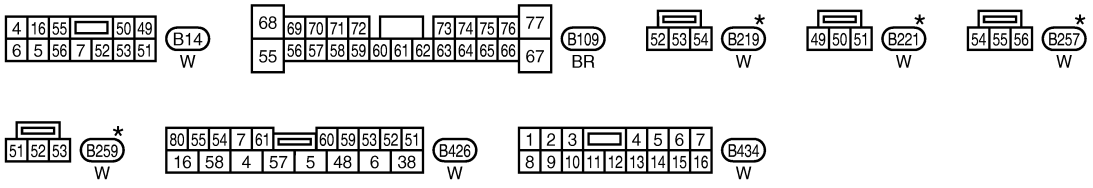


REFER TO THE FOLLOWING.
B1 , D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6718E

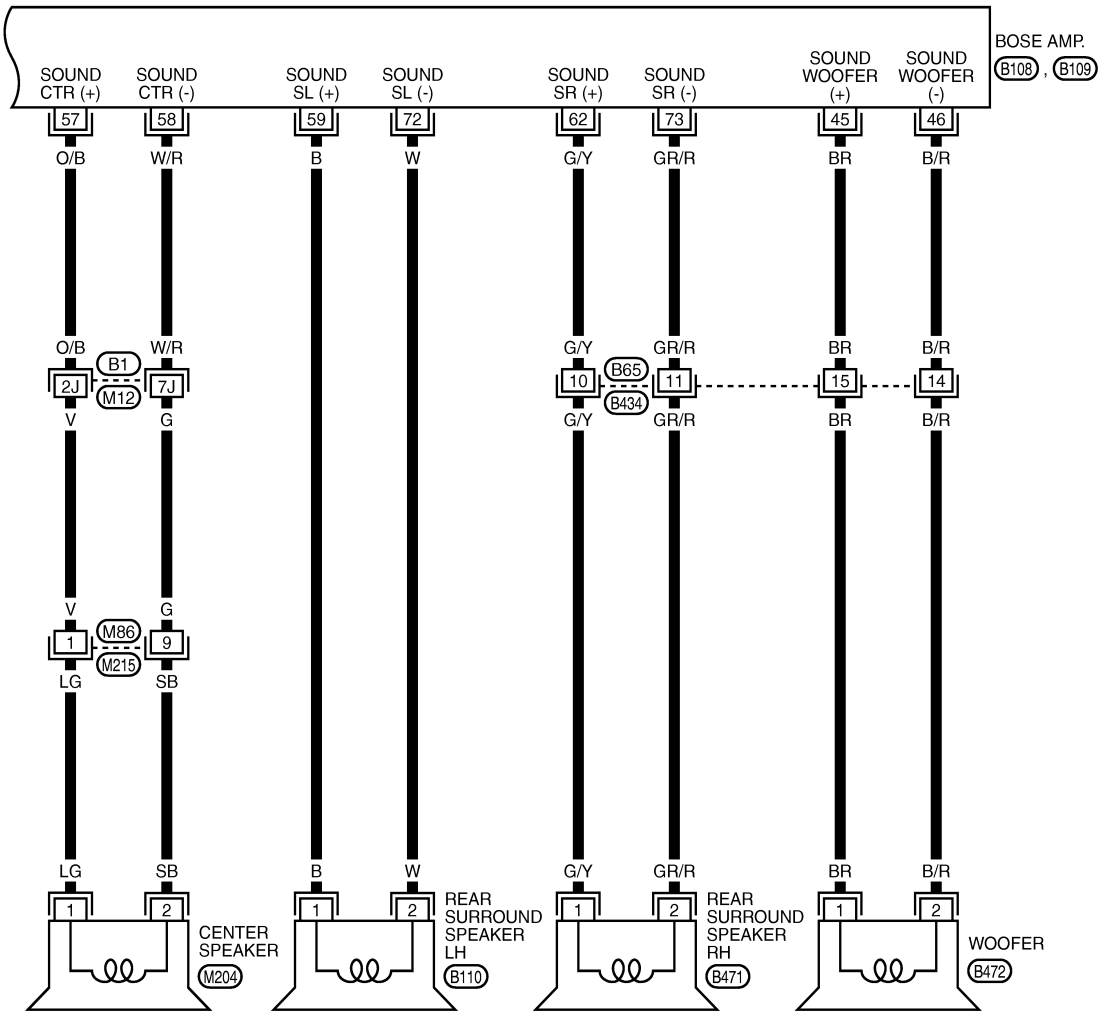
AV-AV-41

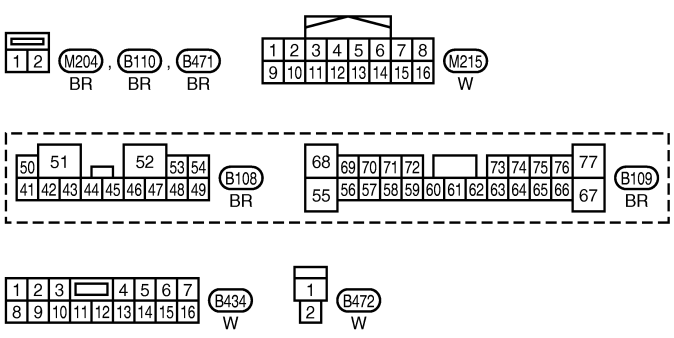




*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6719E

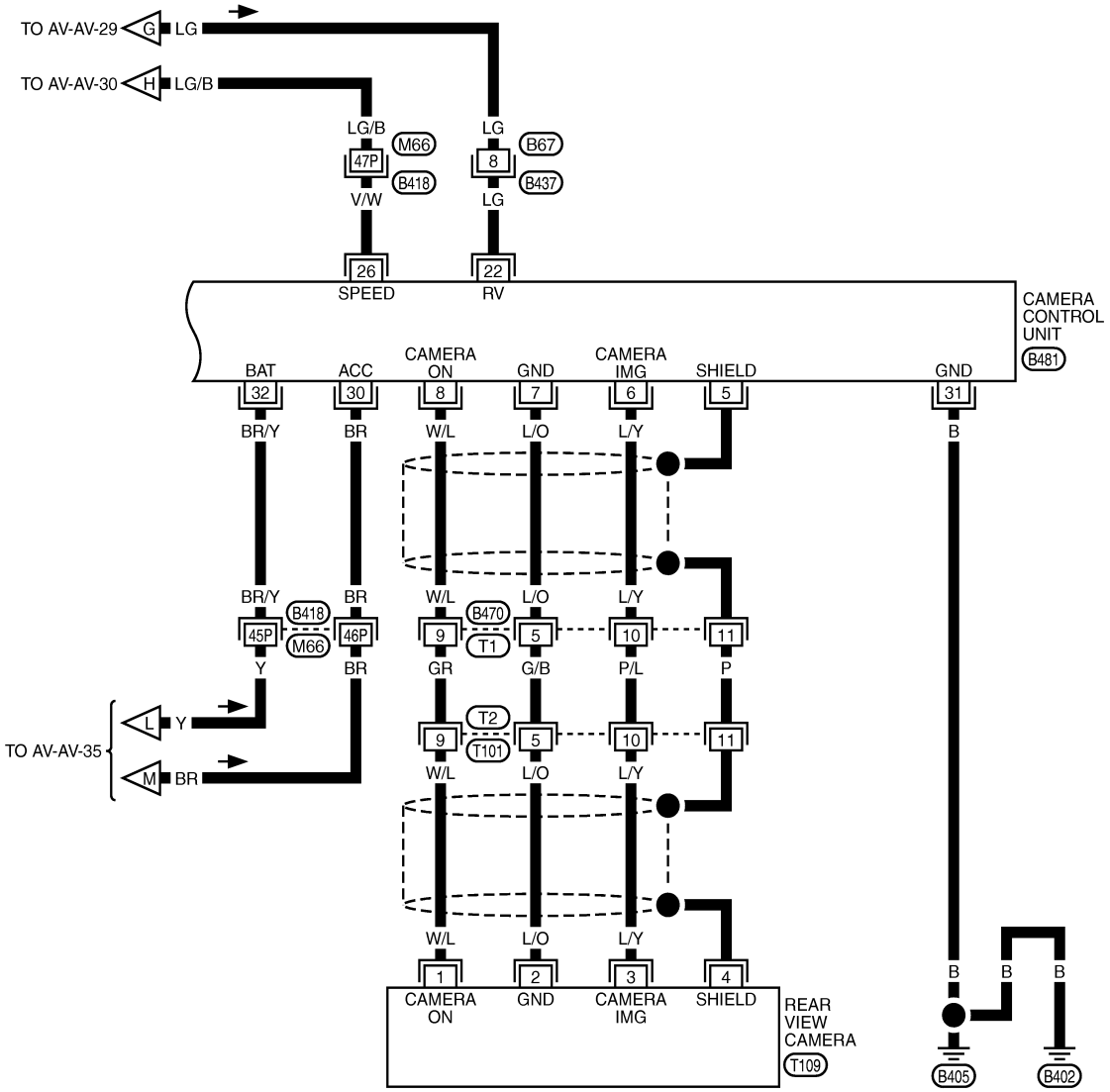


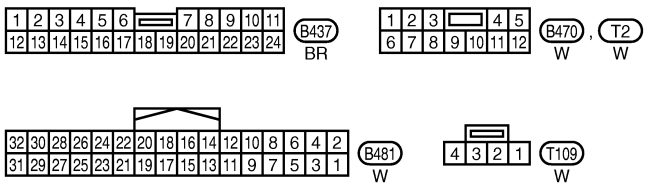


REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6720E

AV-AV-43





REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

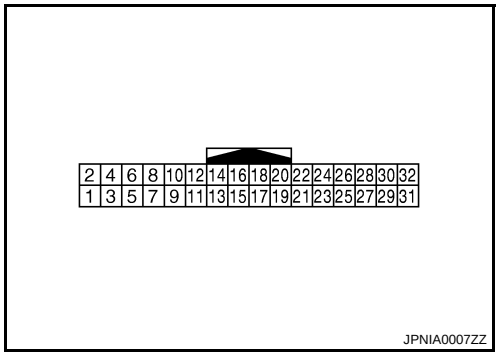
TKWT6721E

CAMERA CONTROL UNIT

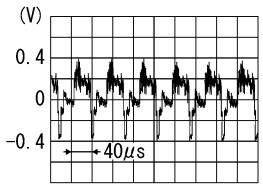
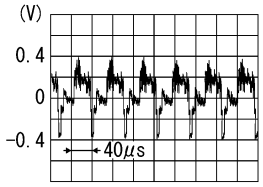
Reference Value

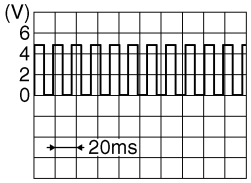
INFOID:0000000004155823

TERMINAL LAYOUT



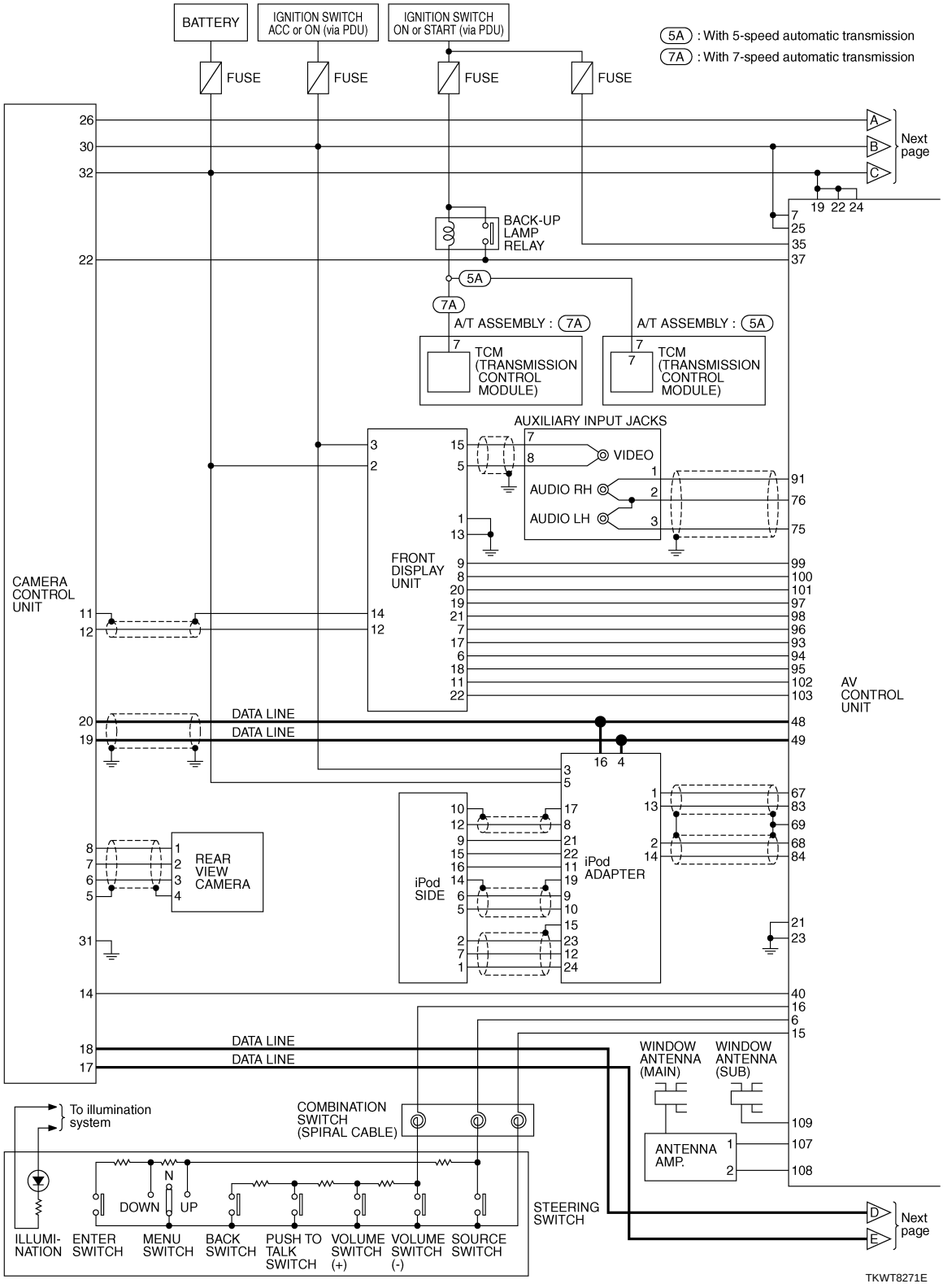
PHYSICAL VALUES

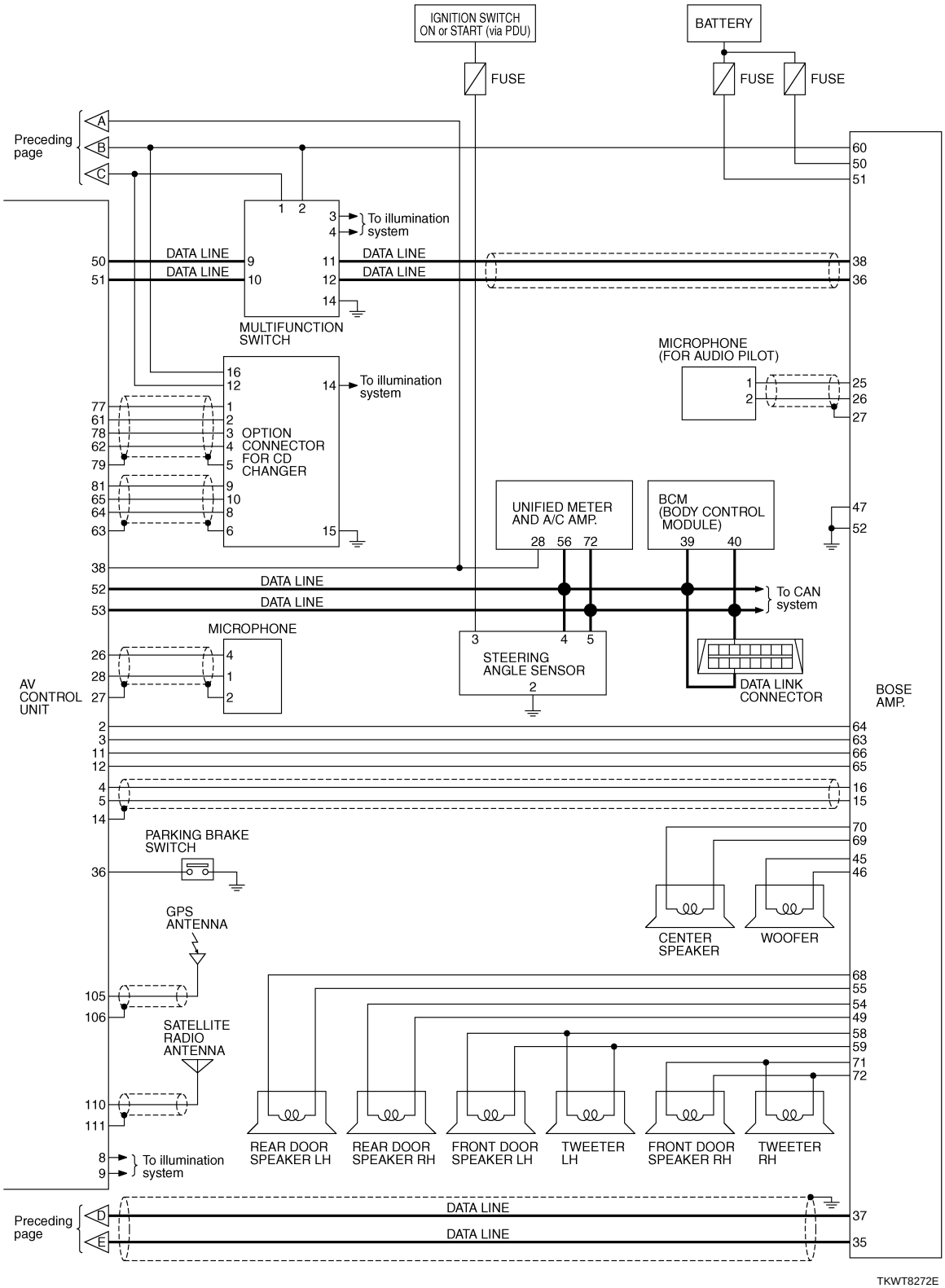
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
5	—	Shield	—	—	—	—
6 (L/Y)	Ground	Camera image signal	Input	Ignition switch ON	When rear view camera image is displayed.	 SKIB2251J
7 (L/O)	Ground	Rear view camera ground	—	Ignition switch ON	—	0 V
8 (W/L)	Ground	Camera ON signal	Output	Ignition switch ON	R position.	6 V
					Other than R position.	0 V
11	—	Shield	—	—	—	—
12 (Y)	Ground	Camera image signal	Output	Ignition switch ON	When rear view camera image is displayed.	 SKIB2251J
14 (V)	Ground	Camera-connection recognition signal	Output	Ignition switch ON	Connected to camera control unit connector.	0 V
					Not connected to camera control unit connector.	5 V
17 (G)	—	AV communication signal (L)	Input/ Output	—	—	—
18 (R)	—	AV communication signal (H)	Input/ Output	—	—	—
19 (R)	—	AV communication signal (L)	Input/ Output	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
20 (W)	—	AV communication signal (H)	Input/ Output	—	—	—
22 (LG)	Ground	Reverse signal	Input	Ignition switch ON	R position.	12 V
					Other than R position.	0 V
26 (V/W)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH).	**NOTE:** Maximum voltage may be 12 V due to specifications (connected units).  SKIA6649J
30 (BR)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
31 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
32 (BR/Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage

Schematic - BOSE Audio 2ch System -

INFOID:0000000004380464





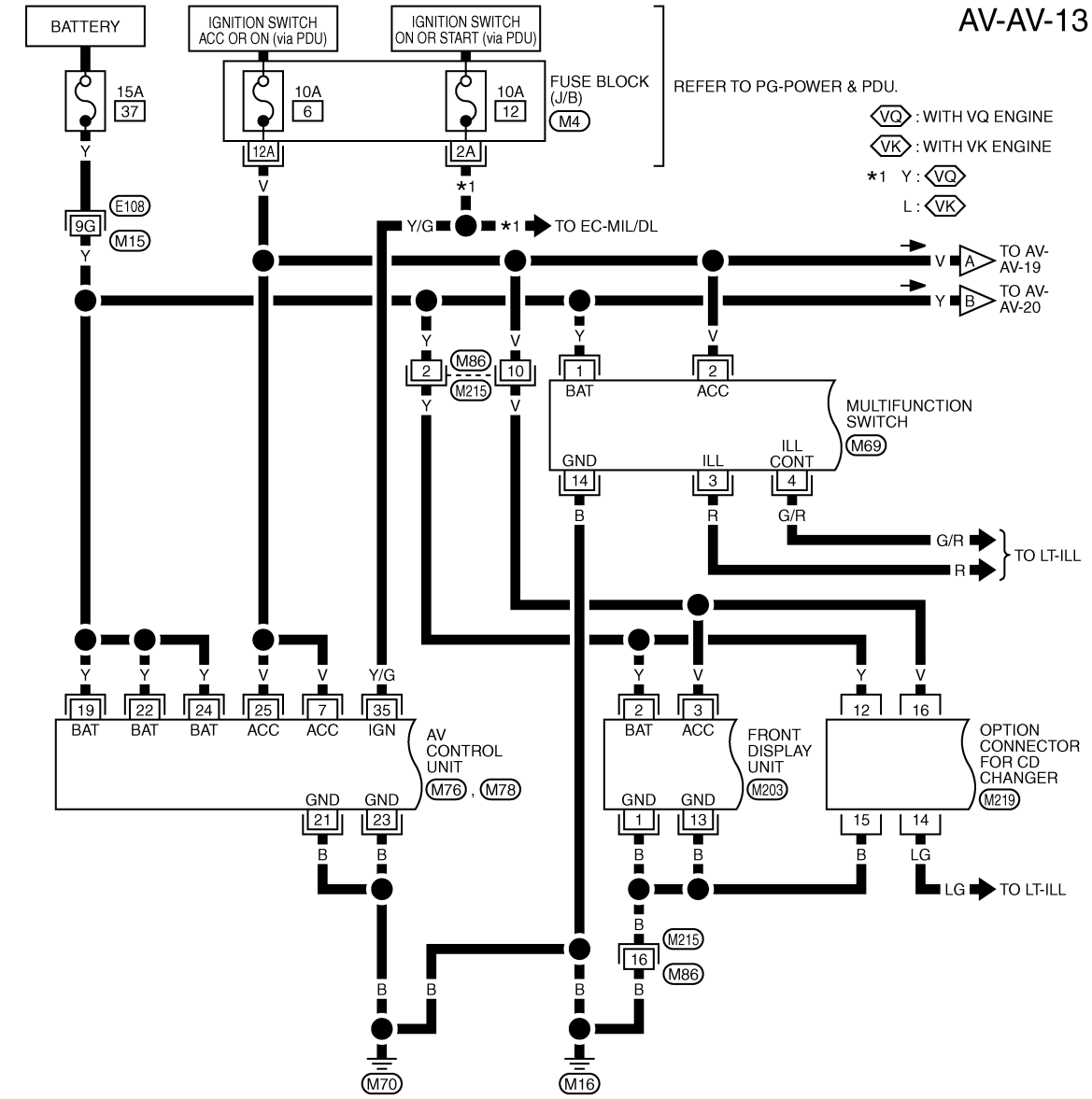
TKWT8272E

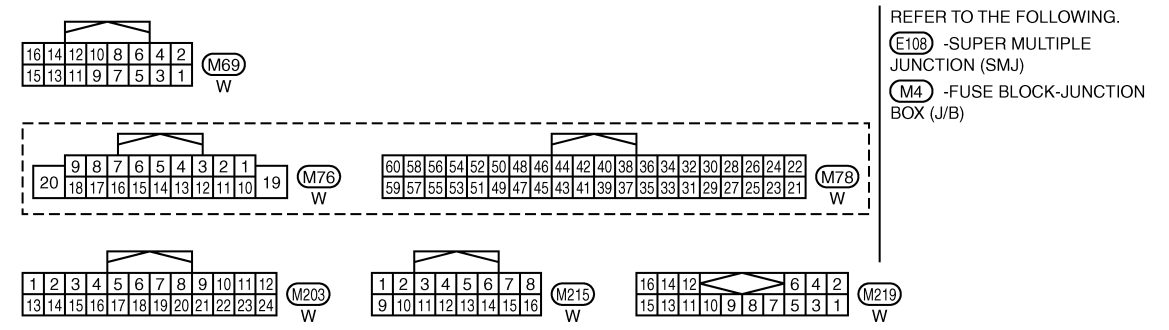
Wiring Diagram - AV - / BOSE Audio 2ch System

INFOID:0000000004380465

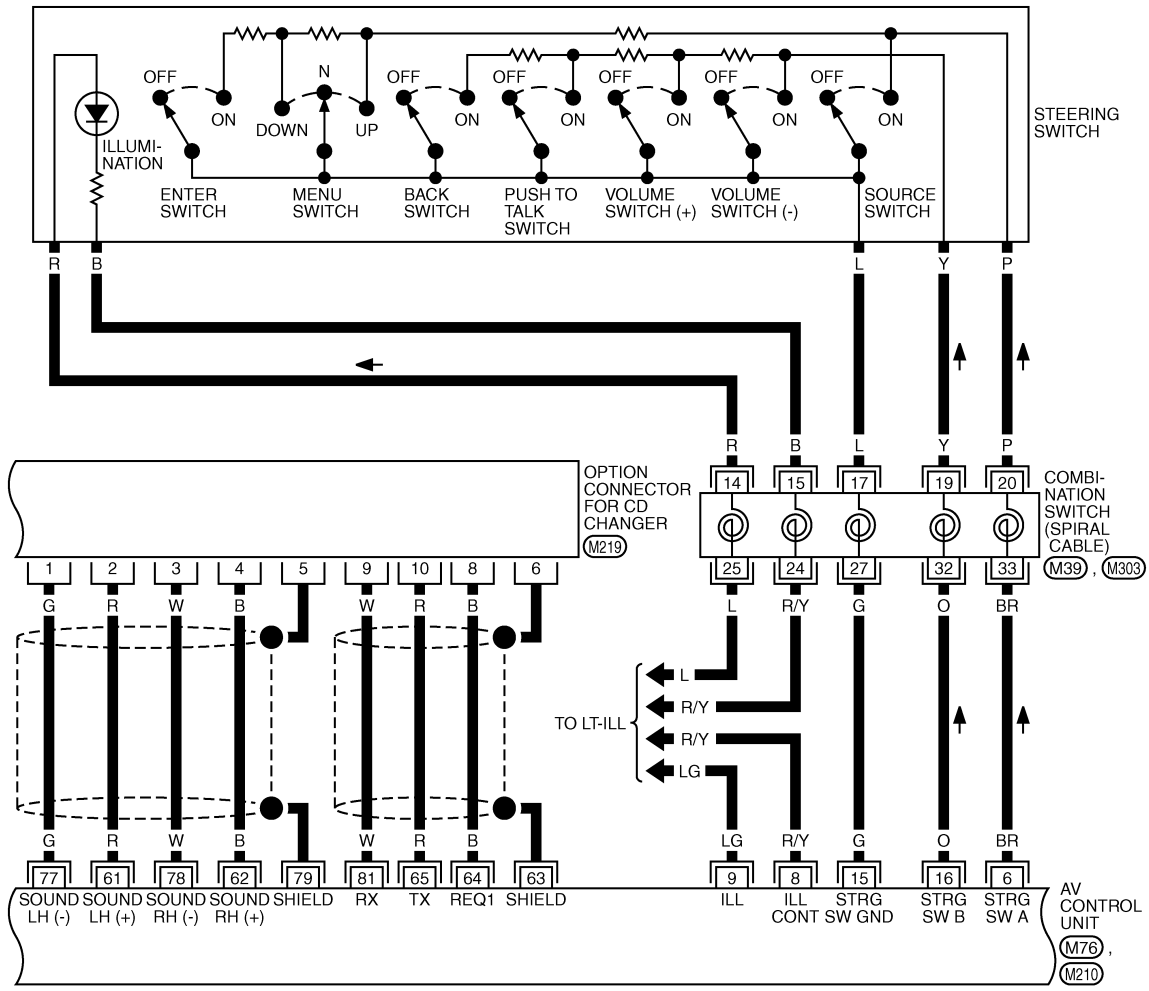
NOTE:

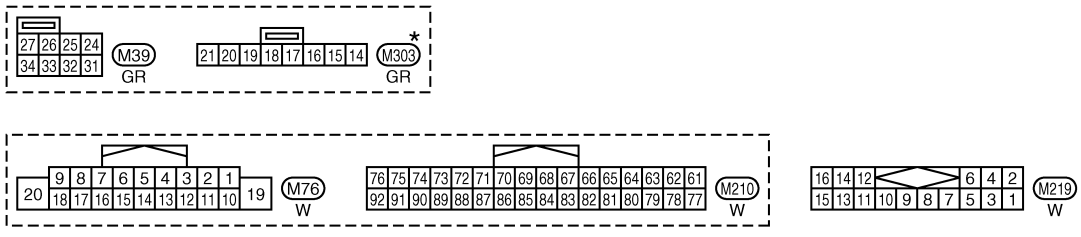
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.





TKWT8273E

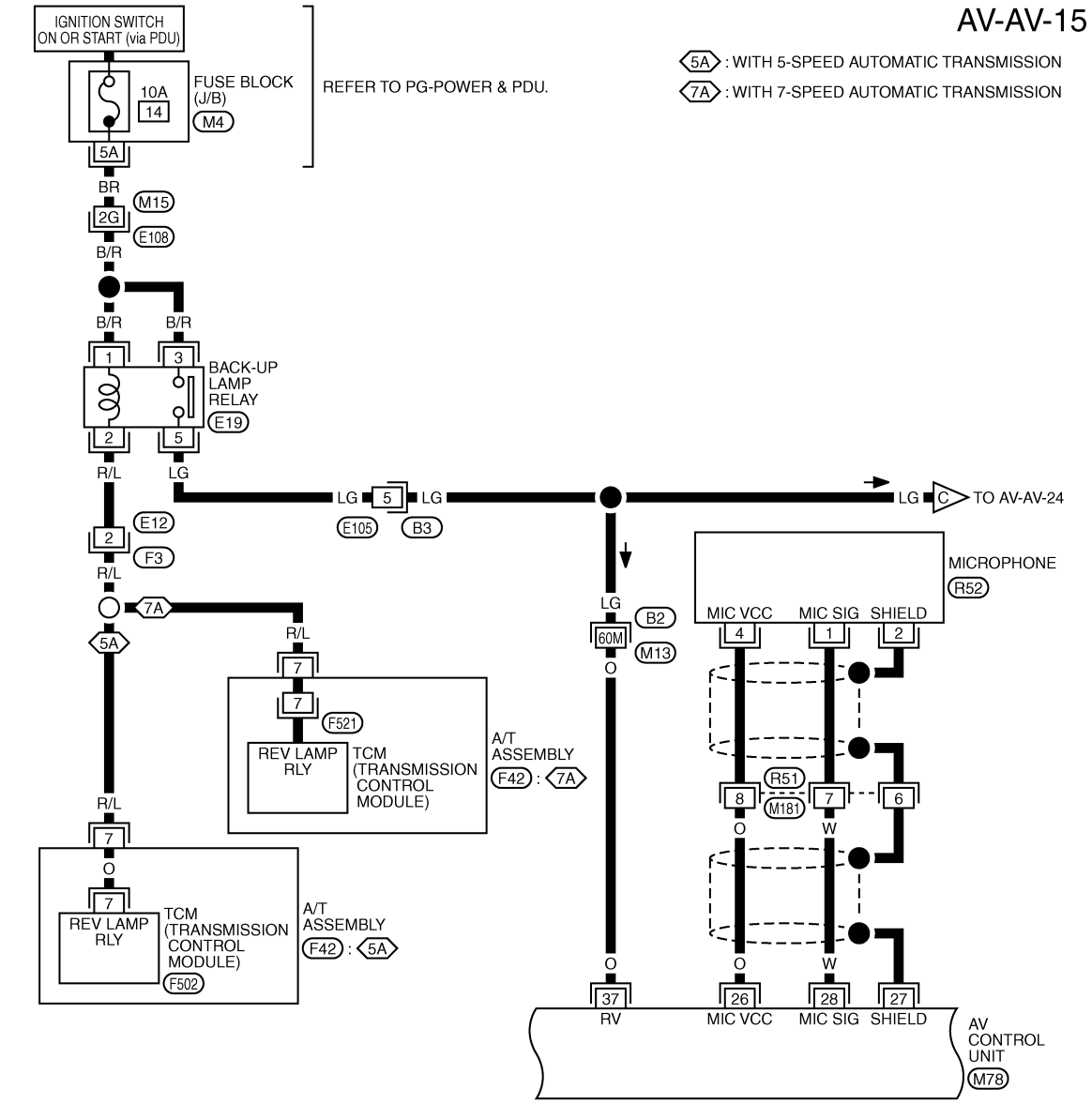


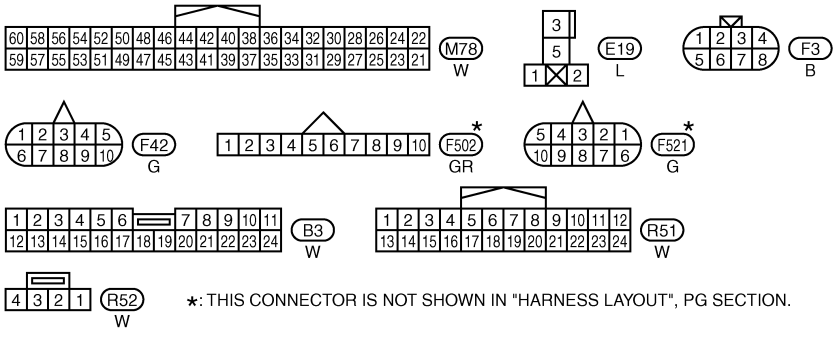


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8274E

AV-AV-15

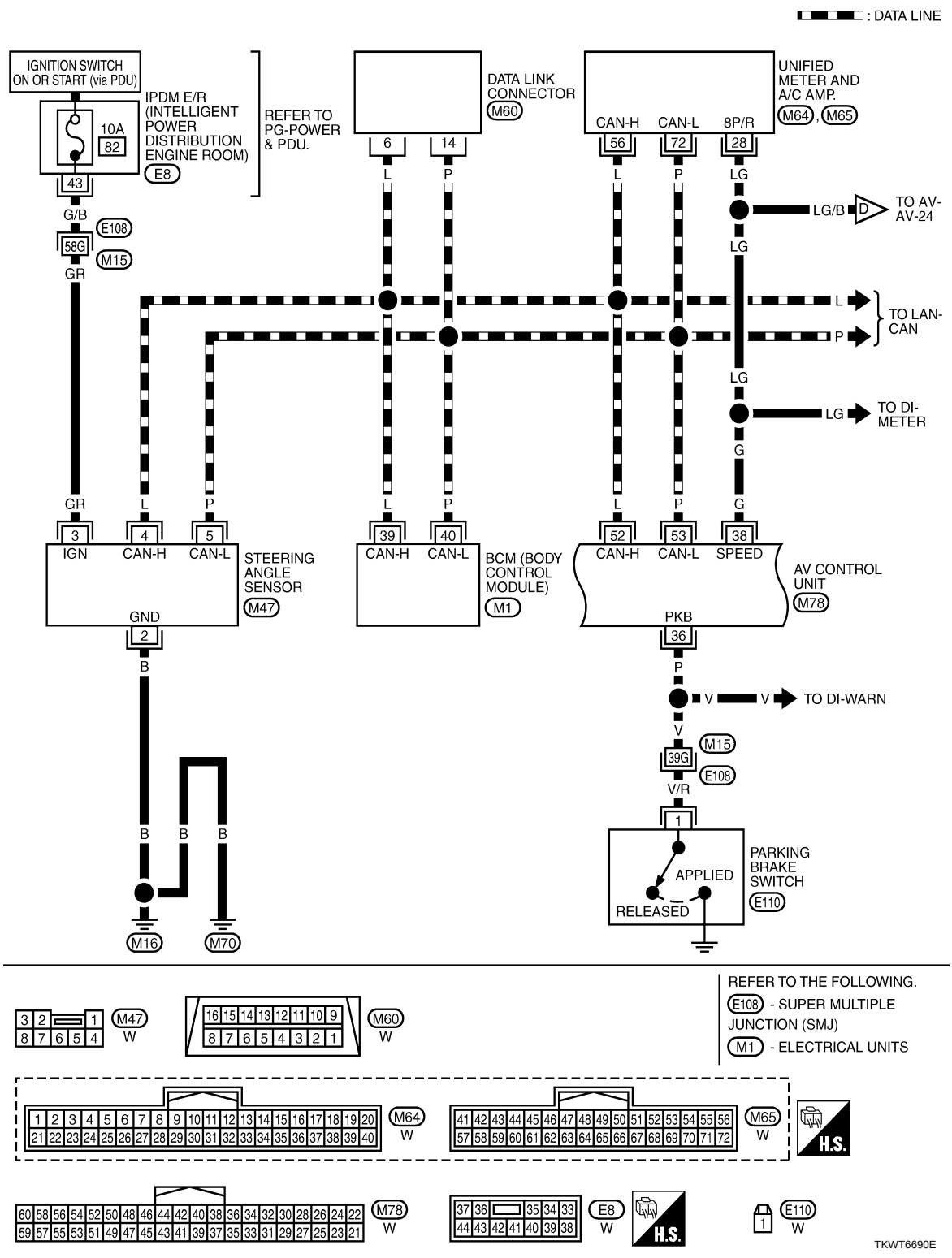




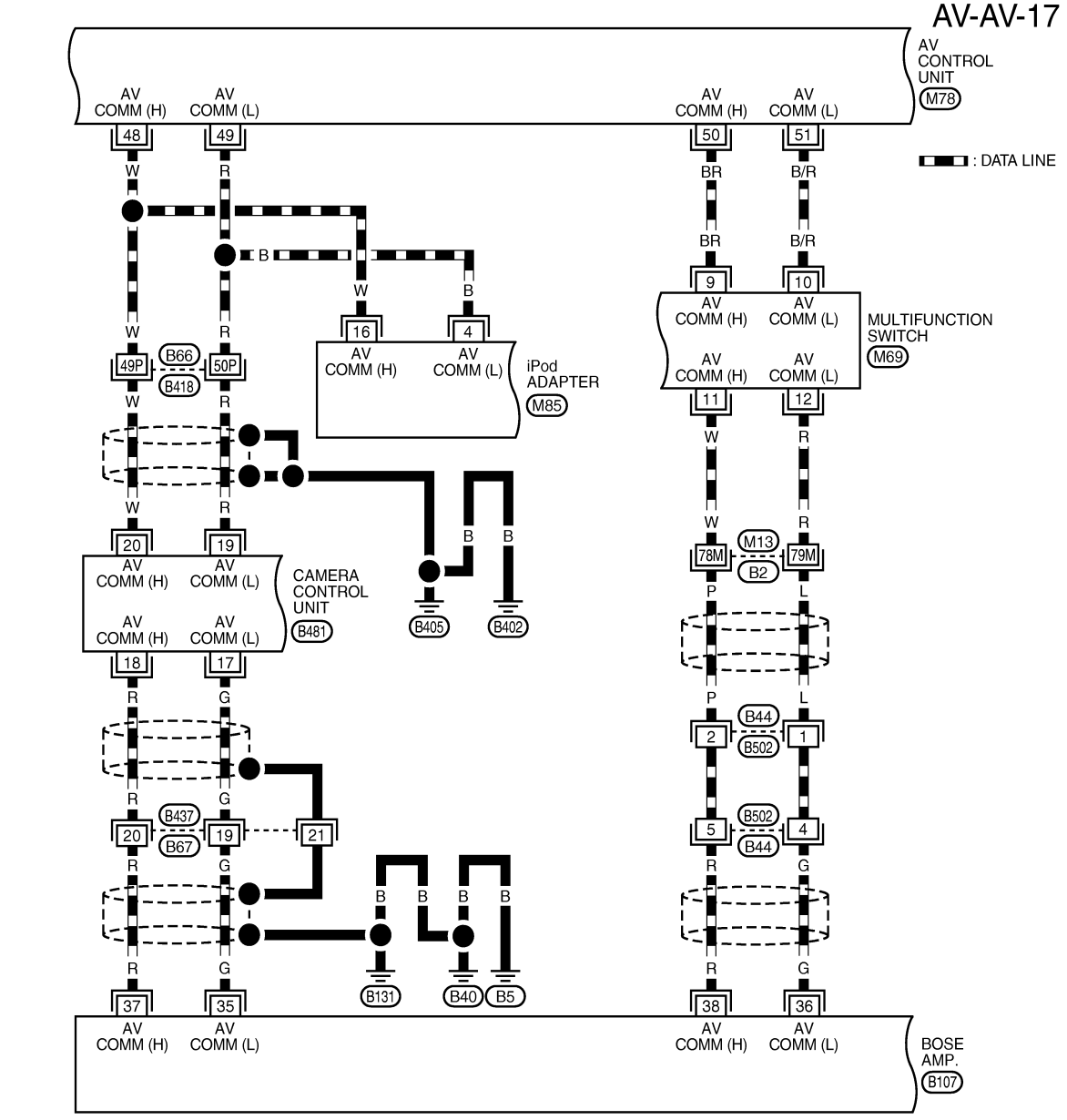
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

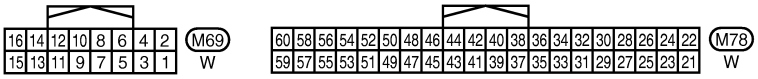
TKWT8275E

AV-AV-16

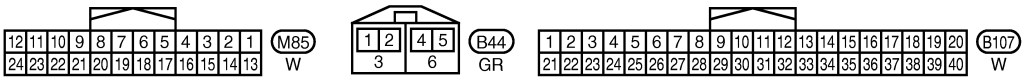

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
G/B
E108
58G
M15
GR
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
L
P
UNIFIED METER AND A/C AMP. M64, M65
CAN-H
CAN-L
8P/R
56
72
28
L
P
LG
LG/B
D
TO AV-AV-24
LG
L
P
TO LAN-CAN
LG
LG
TO DI-METER
G
GR
L
P
3
4
5
IGN
CAN-H
CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE) M1
52
53
38
CAN-H
CAN-L
SPEED
AV CONTROL UNIT M78
PKB
36
P
V
V
TO DI-WARN
V
M15
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B
B
B
M16
M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47
W
M60
W
M64
W
M65
W
H.S.
M78
W
E8
W
E110
W
TKWT6690E

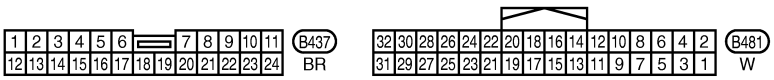
AV-AV-17





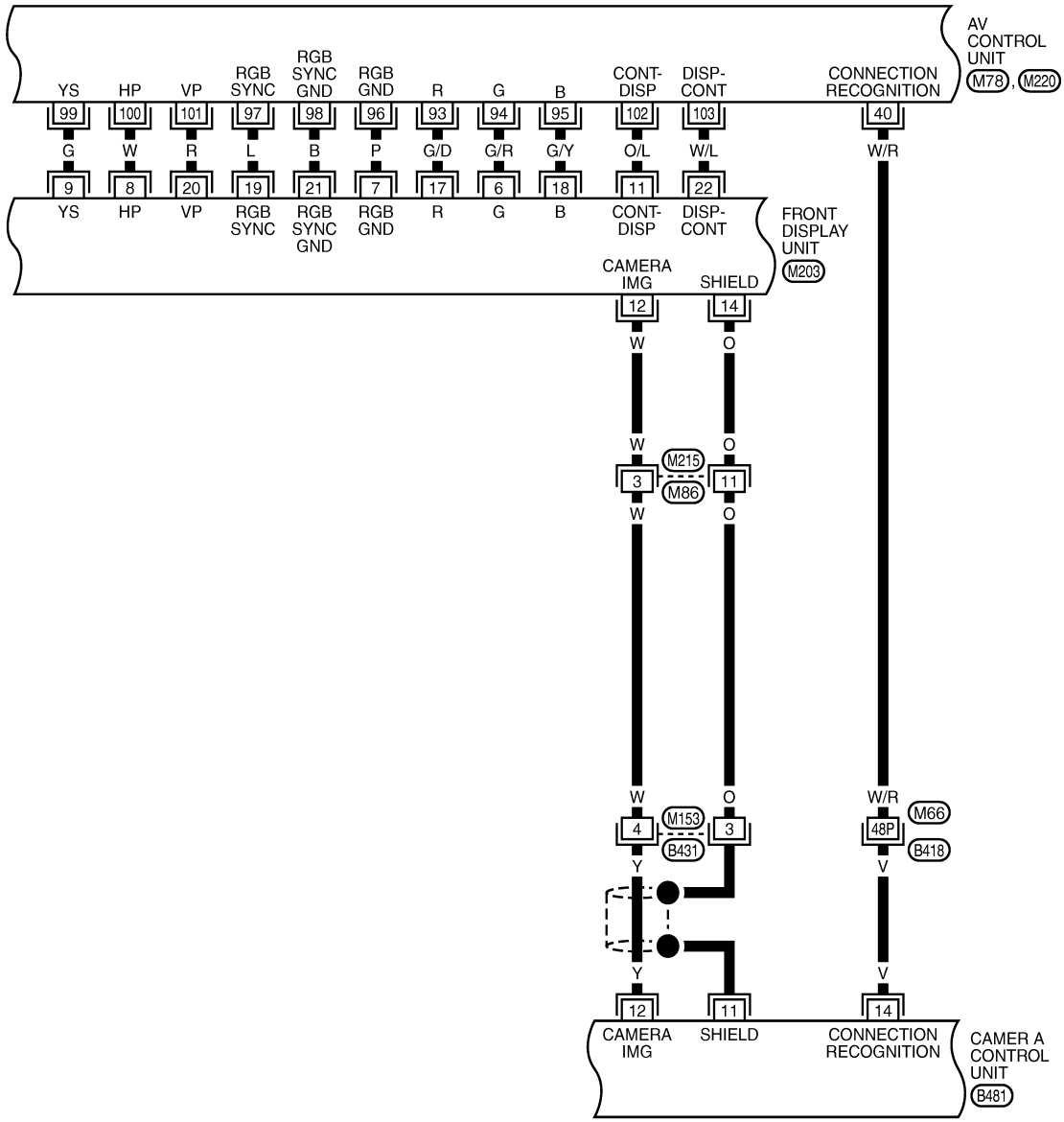
REFER TO THE FOLLOWING.
B2 , B418 - SUPER MULTIPLE JUNCTION (SMJ)

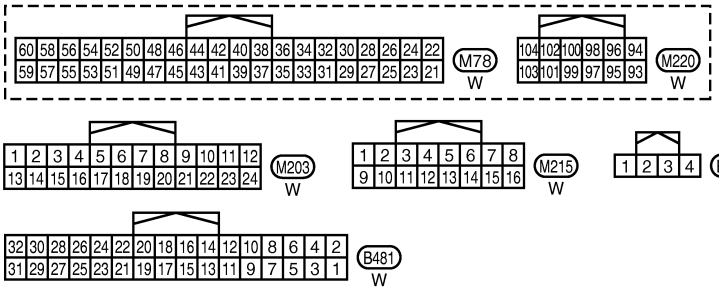




TKWT6691E

AV-AV-18

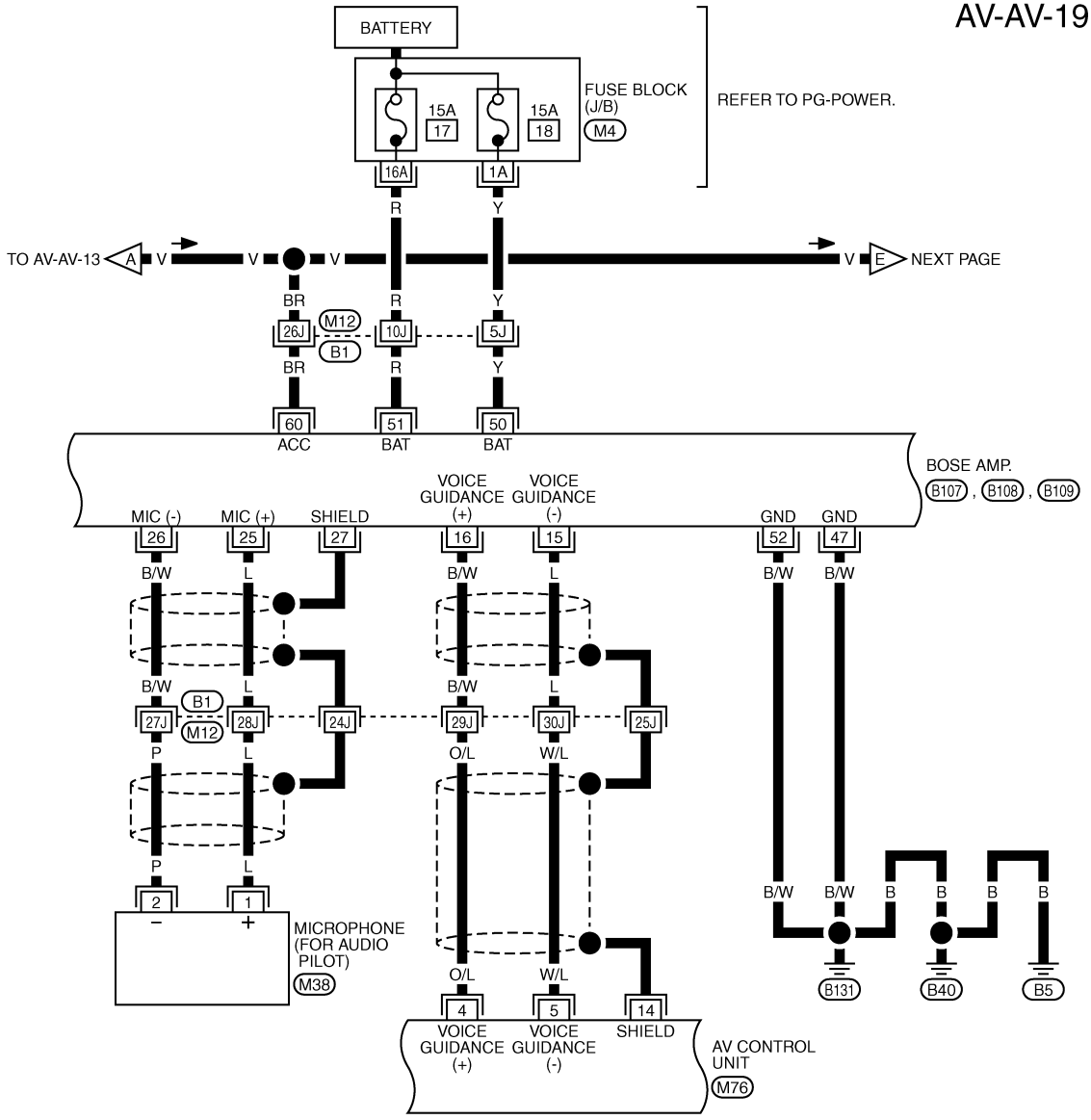


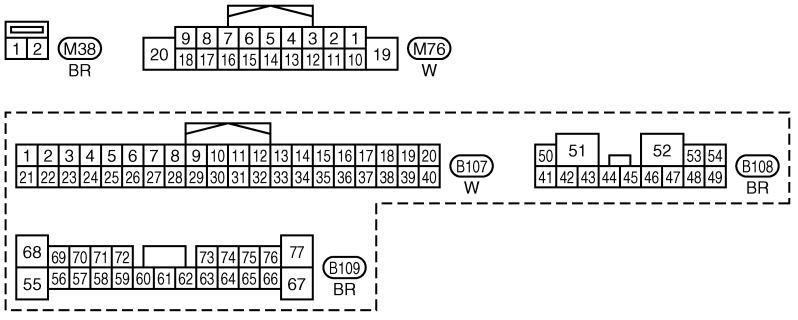


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6692E

AV-AV-19

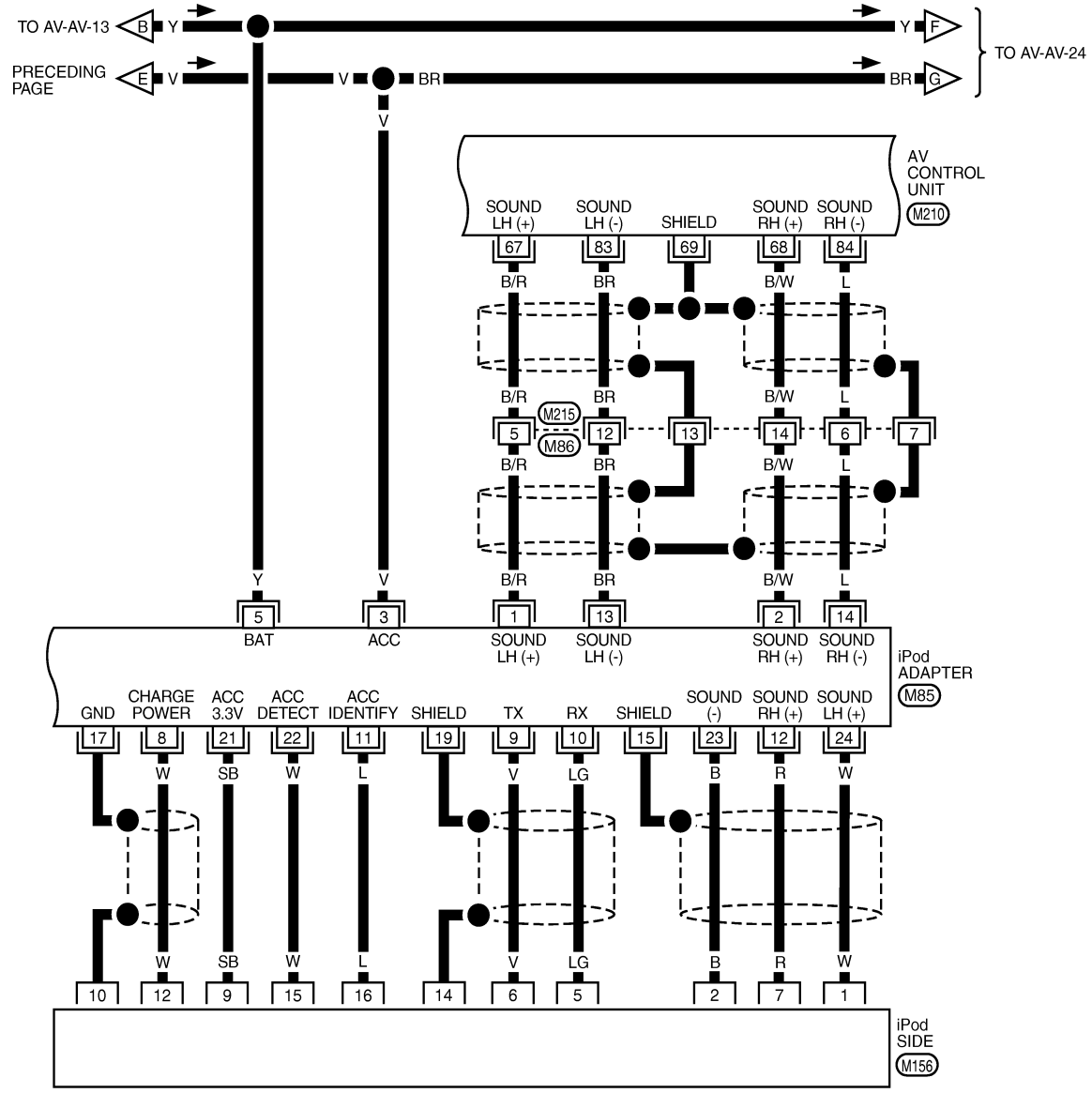


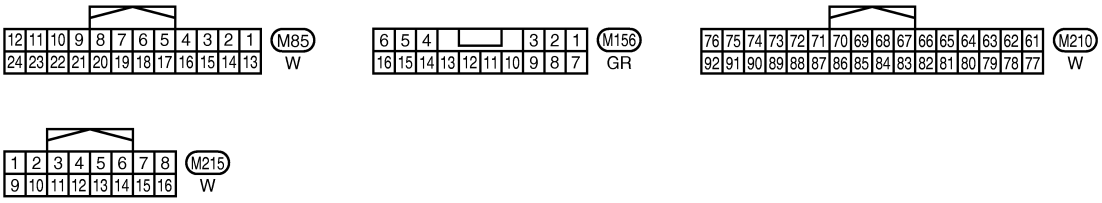


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8276E

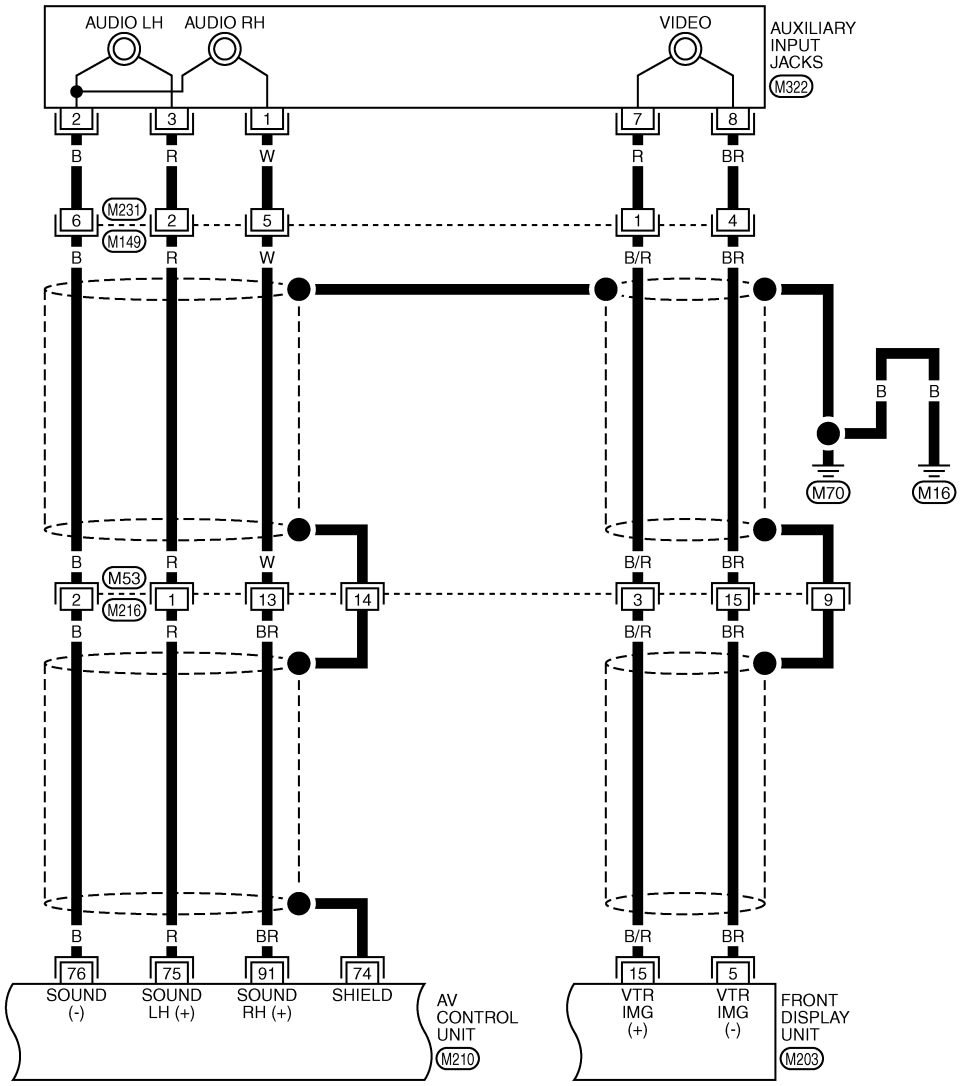
AV-AV-20

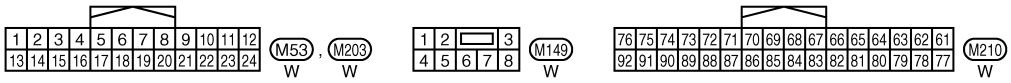


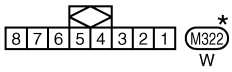


TKWT6695E

AV-AV-21



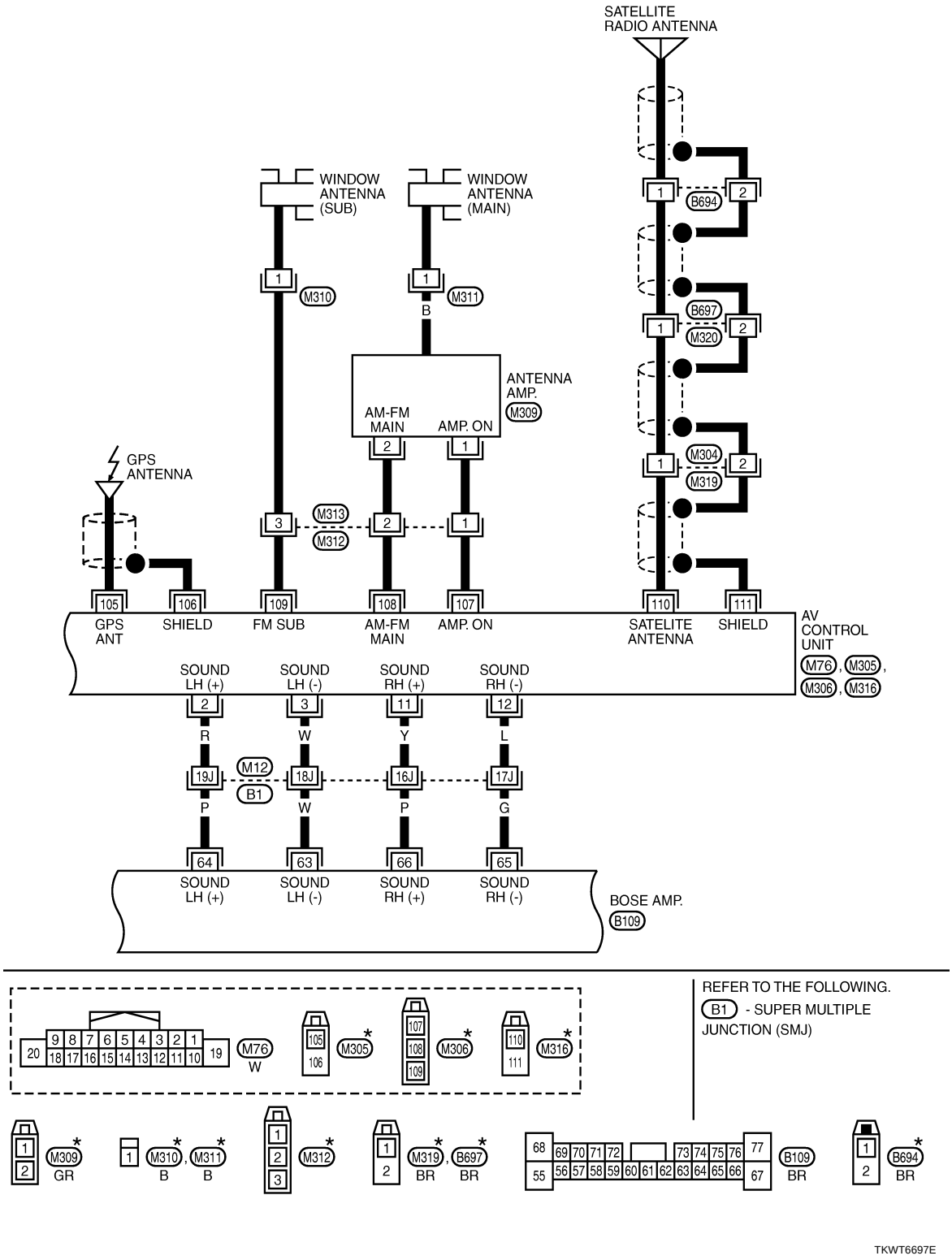




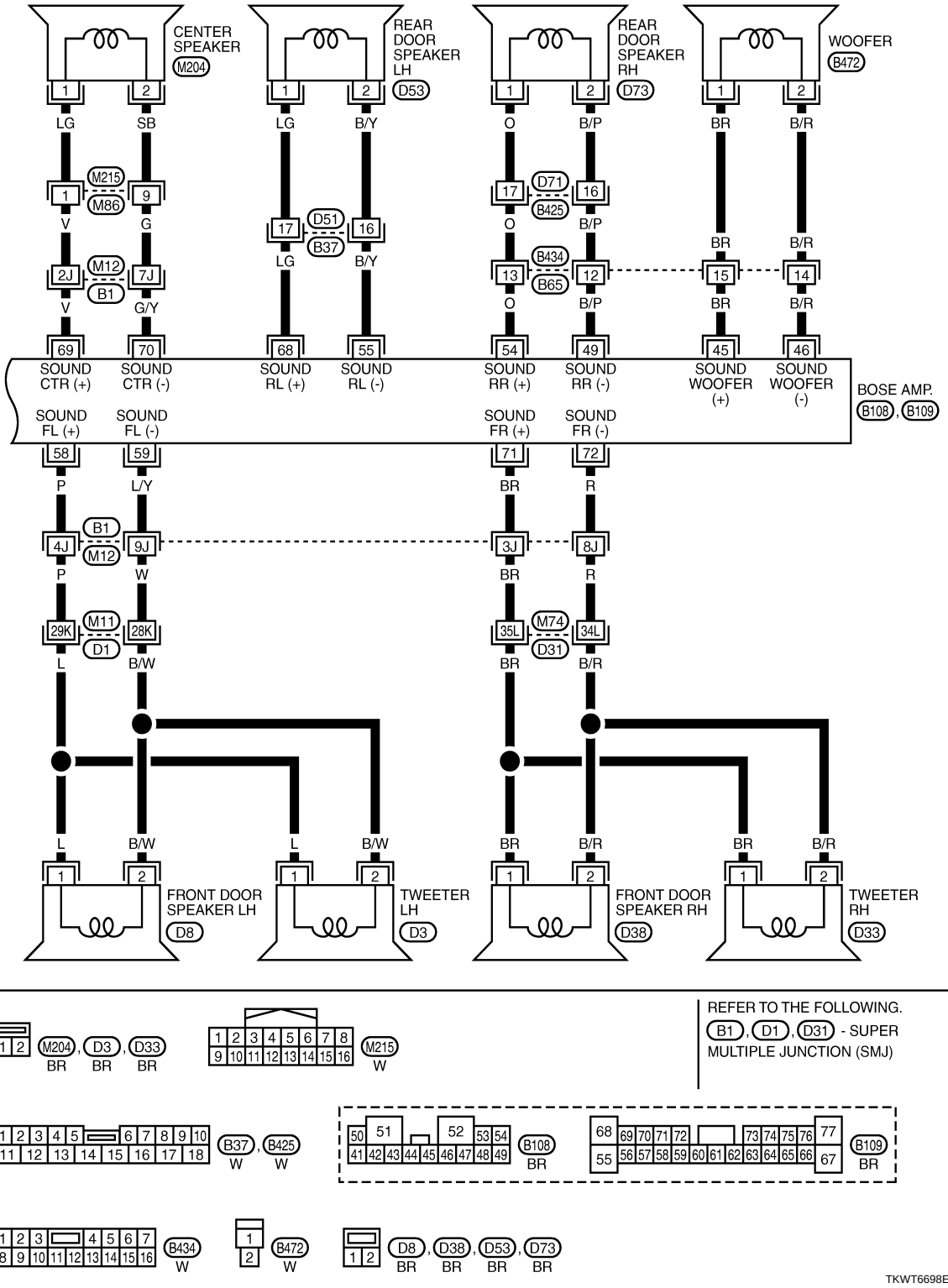
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8277E

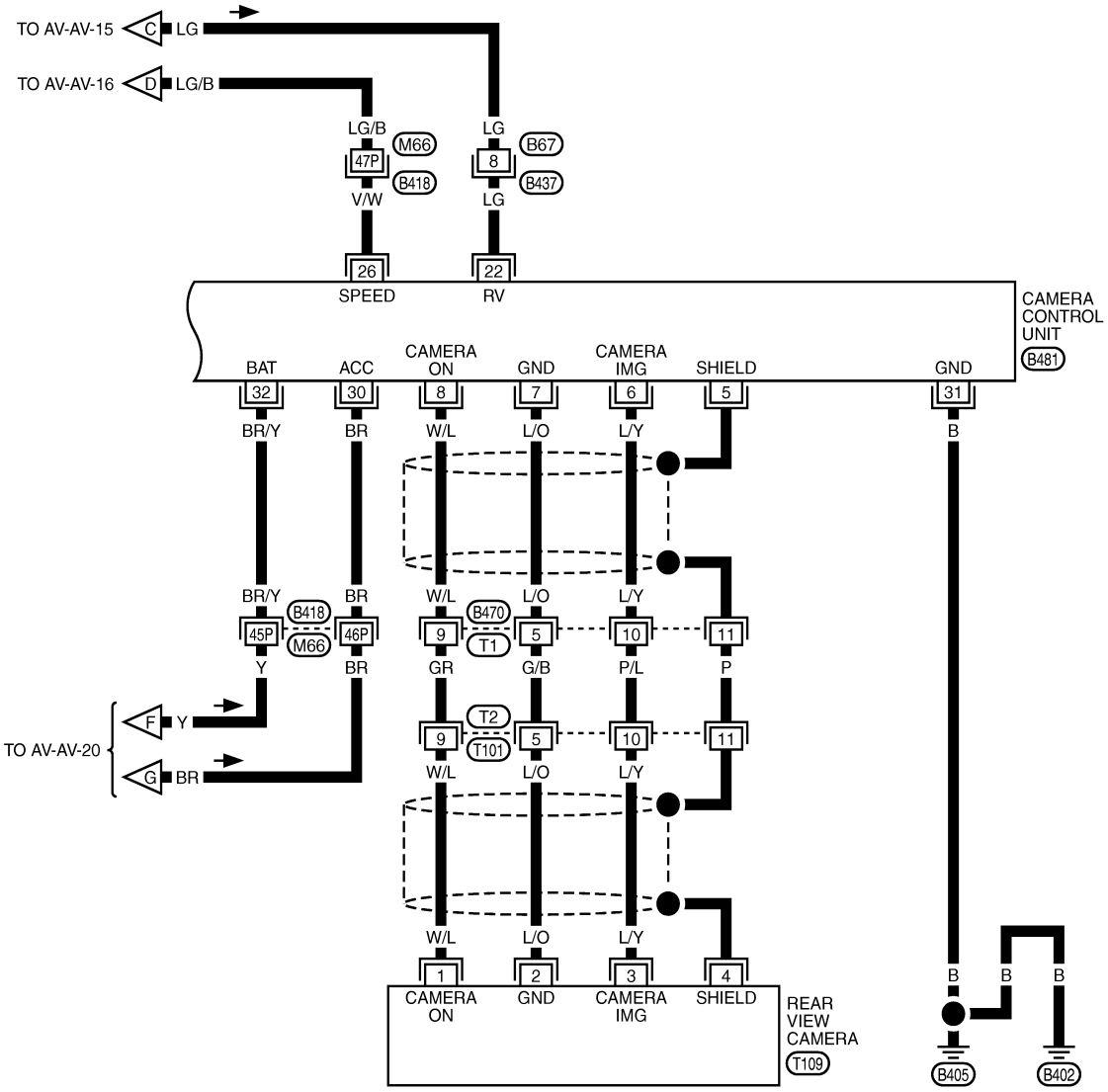
AV-AV-22

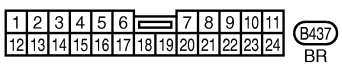

SATELLITE RADIO ANTENNA
WINDOW ANTENNA (SUB)
WINDOW ANTENNA (MAIN)
M310
M311
B
ANTENNA AMP.
M309
AM-FM MAIN
AMP. ON
GPS ANTENNA
M313
M312
B694
B697
M320
M304
M319
105
106
109
108
107
110
111
GPS ANT
SHIELD
FM SUB
AM-FM MAIN
AMP. ON
SATELITE ANTENNA
SHIELD
AV CONTROL UNIT
M76, M305, M306, M316
SOUND LH (+)
SOUND LH (-)
SOUND RH (+)
SOUND RH (-)
2
3
11
12
R
W
Y
L
M12
B1
19J
18J
16J
17J
P
W
P
G
64
63
66
65
BOSE AMP.
B109
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)
M76
W
M305
M306
M316
M309
GR
M310, M311
B
M312
M319, B697
BR
B109
BR
B694
BR
TKWT6697E

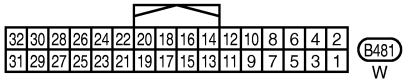
AV-AV-23

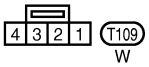

CENTER SPEAKER M204
REAR DOOR SPEAKER LH D53
REAR DOOR SPEAKER RH D73
WOOFER B472
LG SB LG B/Y O B/P BR B/R
M215 M86 D51 B37 D71 B425 B434 B65 M12 B1
V G LG B/Y O B/P BR B/R
2J 7J 17 16 13 12 15 14
V G/Y O B/P BR B/R
69 70 68 55 54 49 45 46
SOUND CTR (+) SOUND CTR (-) SOUND RL (+) SOUND RL (-) SOUND RR (+) SOUND RR (-) SOUND WOOFER (+) SOUND WOOFER (-)
BOSE AMP. B108, B109
SOUND FL (+) SOUND FL (-) SOUND FR (+) SOUND FR (-)
58 59 71 72
P L/Y BR R
B1 M12 4J 9J 3J 8J
P W BR R
M11 D1 29K 28K M74 D31 35L 34L
L B/W BR B/R
L B/W L B/W BR B/R BR B/R
FRONT DOOR SPEAKER LH D8
TWEETER LH D3
FRONT DOOR SPEAKER RH D38
TWEETER RH D33
M204, D3, D33 BR BR BR
M215 W
REFER TO THE FOLLOWING.
B1, D1, D31 - SUPER MULTIPLE JUNCTION (SMJ)
B37, B425 W W
B108 BR
B109 BR
B434 W
B472 W
D8, D38, D53, D73 BR BR BR BR
TKWT6698E

AV-AV-24







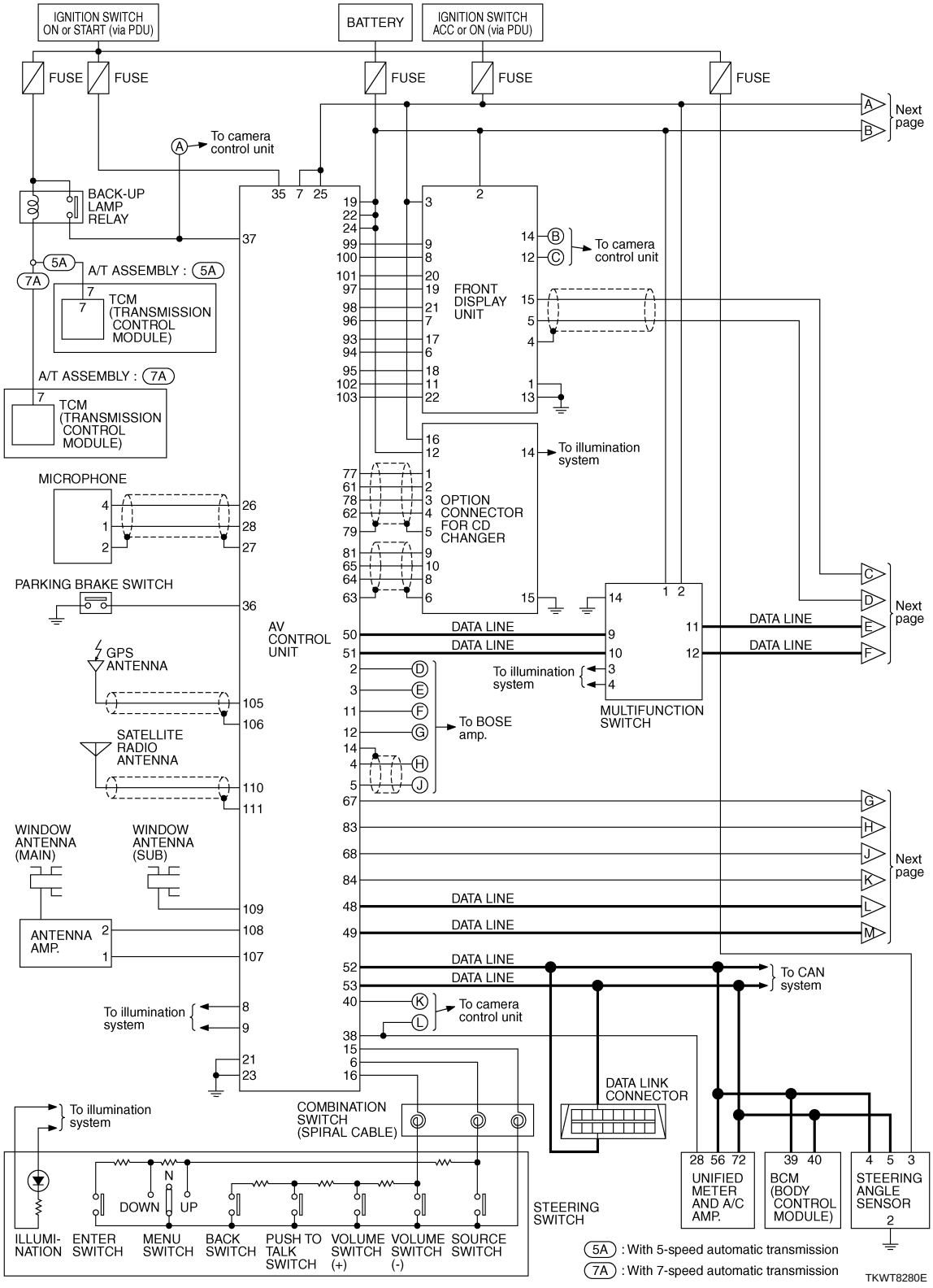


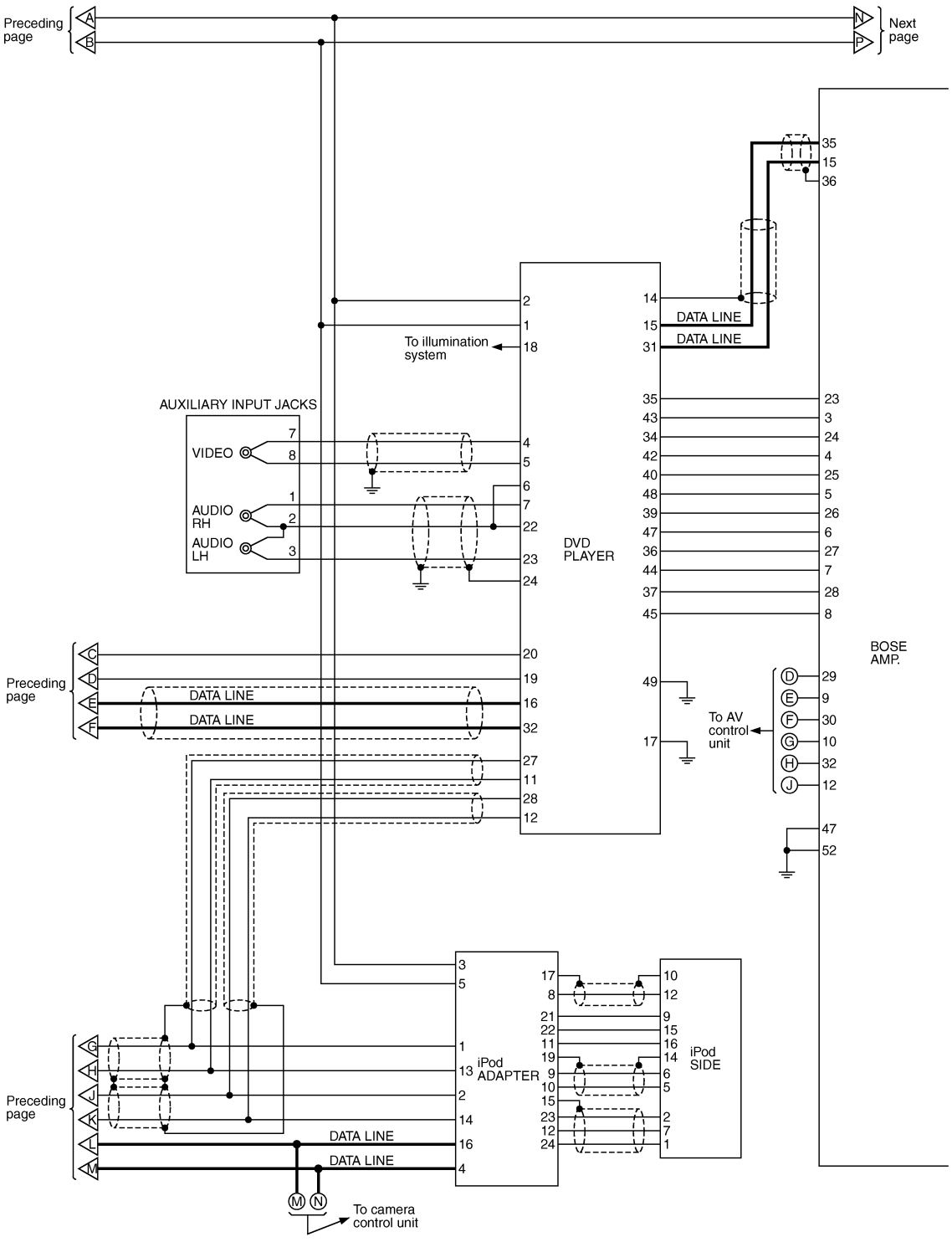
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

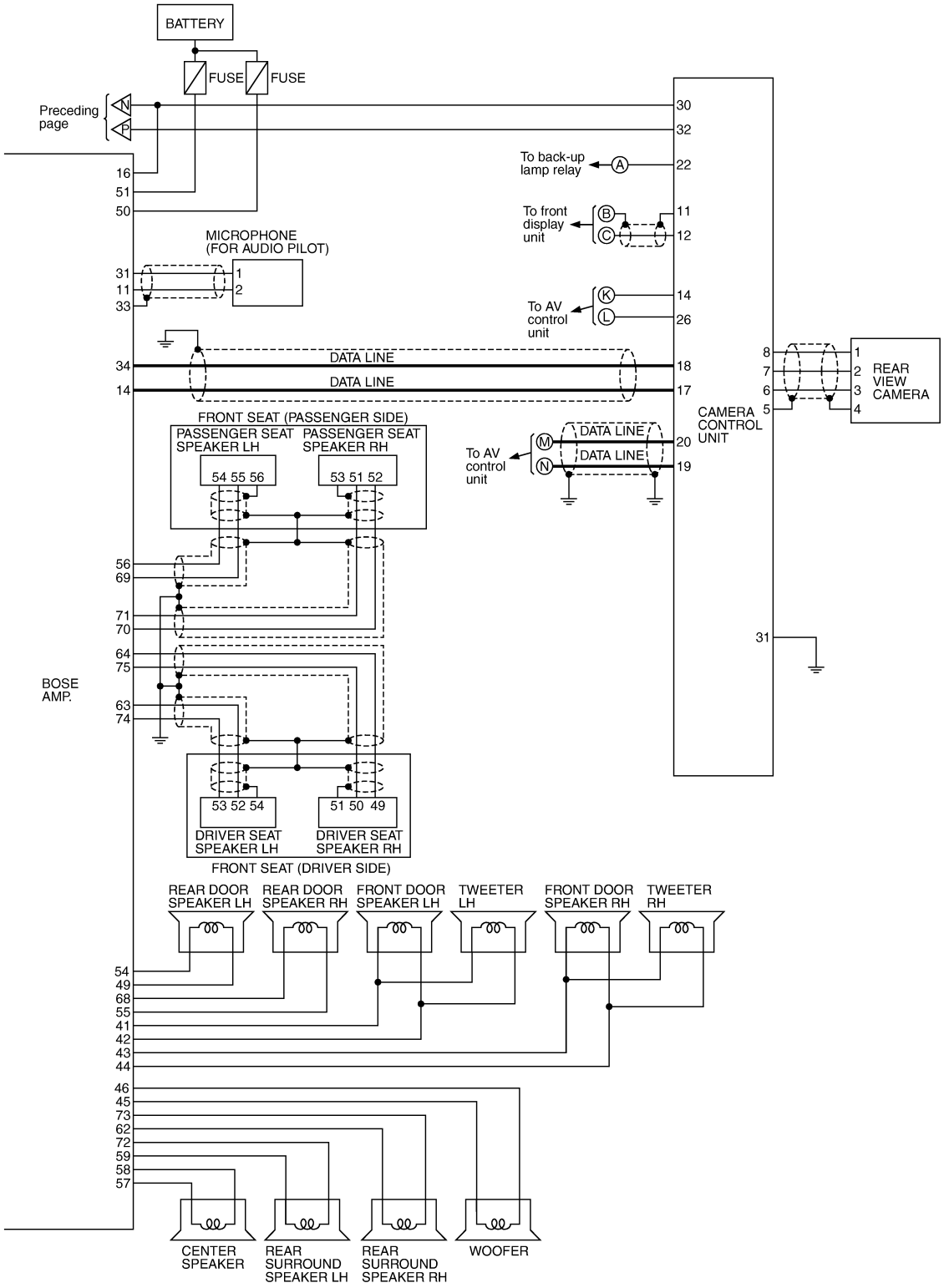
TKWT6699E

Schematic - BOSE Surround Audio 5.1ch System -

INFOID:0000000004380466




Preceding page
A
B
Next page
N
P
AUXILIARY INPUT JACKS
VIDEO
AUDIO RH
AUDIO LH
7
8
1
2
3
4
5
6
7
22
23
24
To illumination system
18
2
1
DVD PLAYER
14
15
31
DATA LINE
DATA LINE
35
15
36
35
43
34
42
40
48
39
47
36
44
37
45
23
3
24
4
25
5
26
6
27
7
28
8
BOSE AMP.
49
17
To AV control unit
D
E
F
G
H
J
29
9
30
10
32
12
47
52
Preceding page
C
D
E
F
DATA LINE
DATA LINE
20
19
16
32
27
11
28
12
3
5
1
13
2
14
16
4
iPod ADAPTER
17
8
21
22
11
19
9
10
15
23
12
24
10
12
9
15
16
14
6
5
2
7
1
iPod SIDE
Preceding page
G
H
J
K
L
M
DATA LINE
DATA LINE
M
N
To camera control unit
TKWT6701E



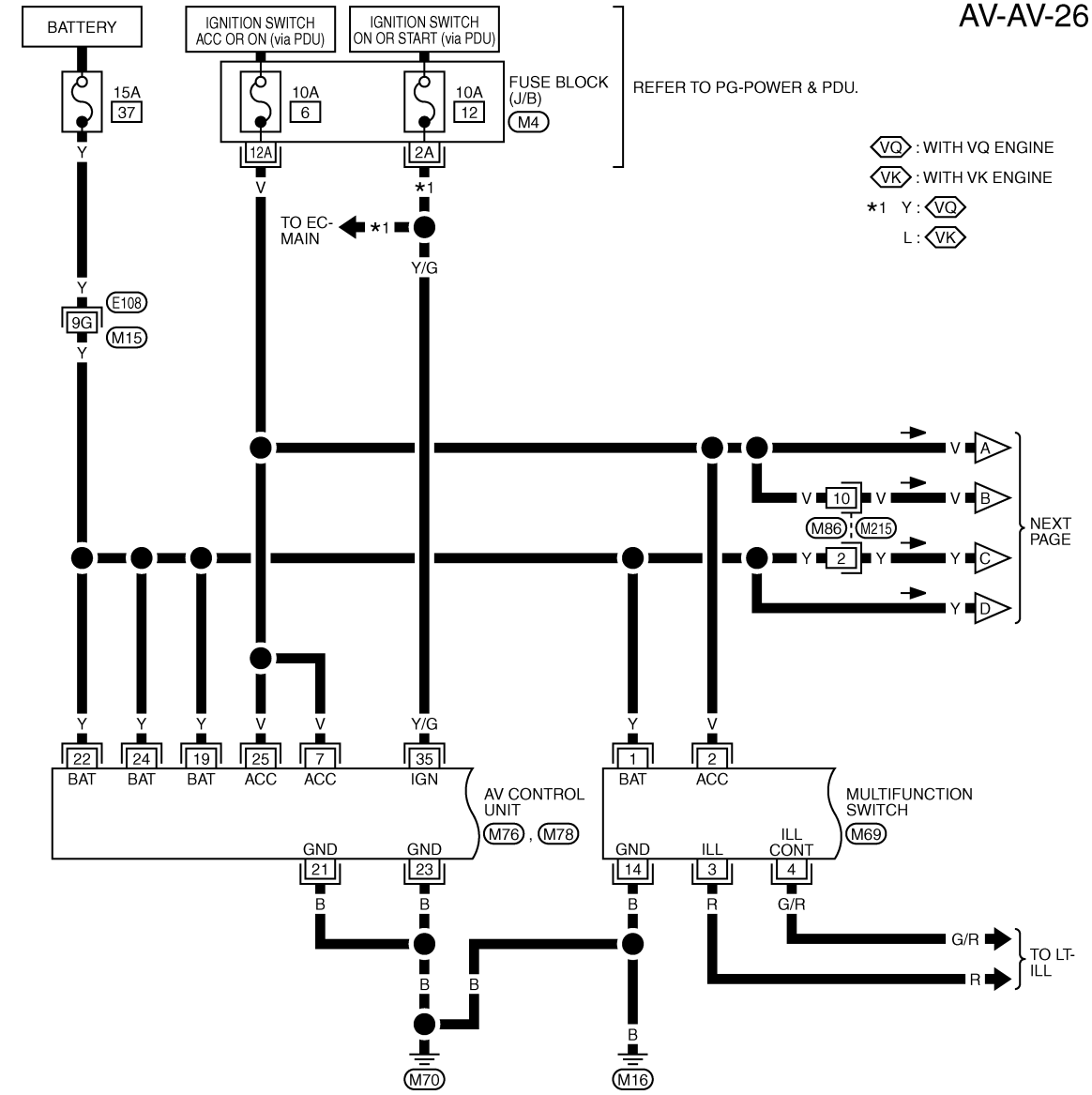
TKWT6702E

Wiring Diagram - AV - / BOSE Surround Audio 5.1ch System

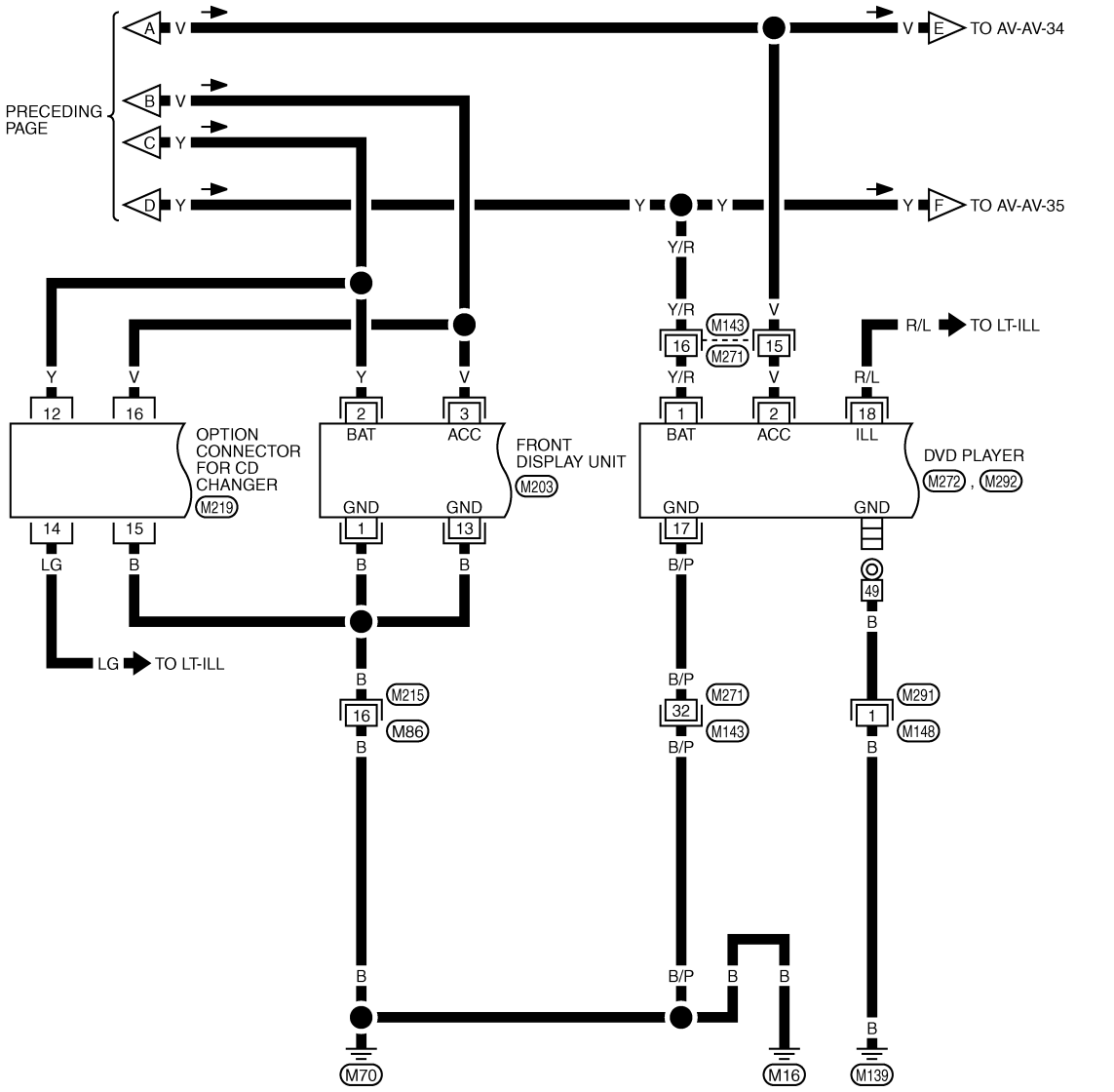
INFOID:0000000004380467

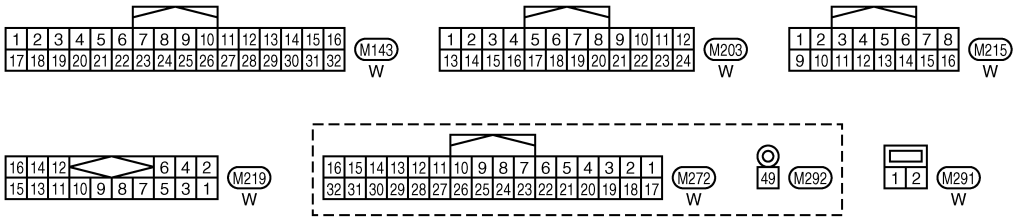
NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.



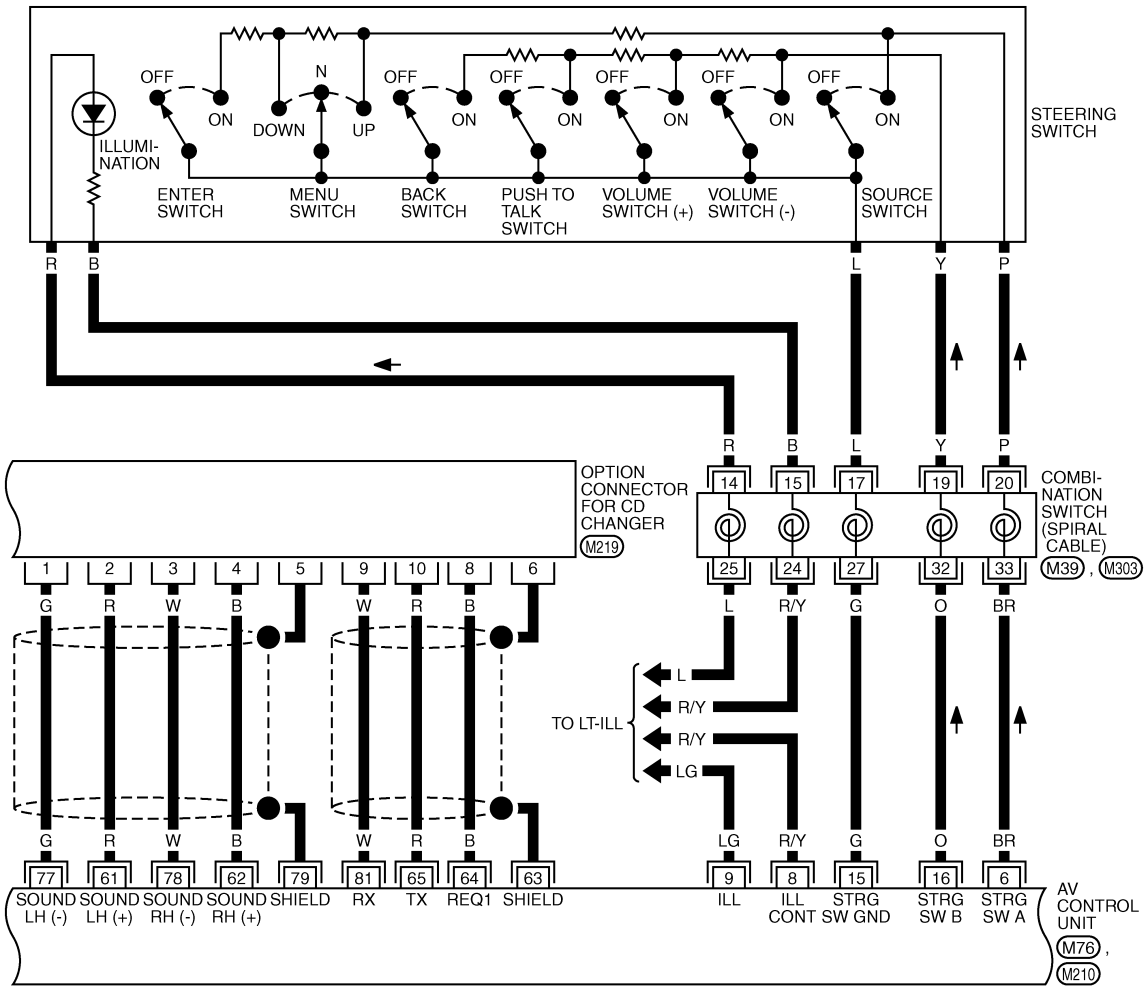
AV-AV-27

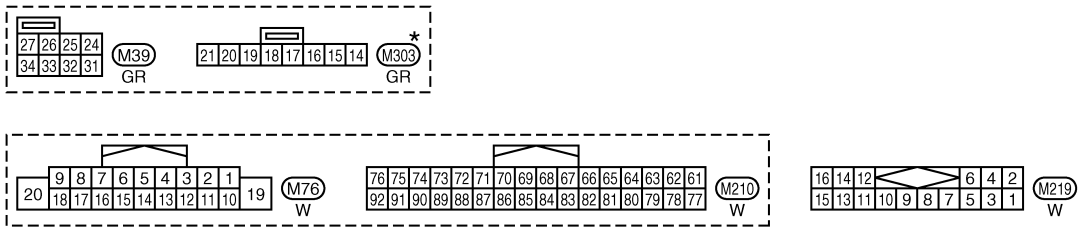




TKWT8282E

AV-AV-28

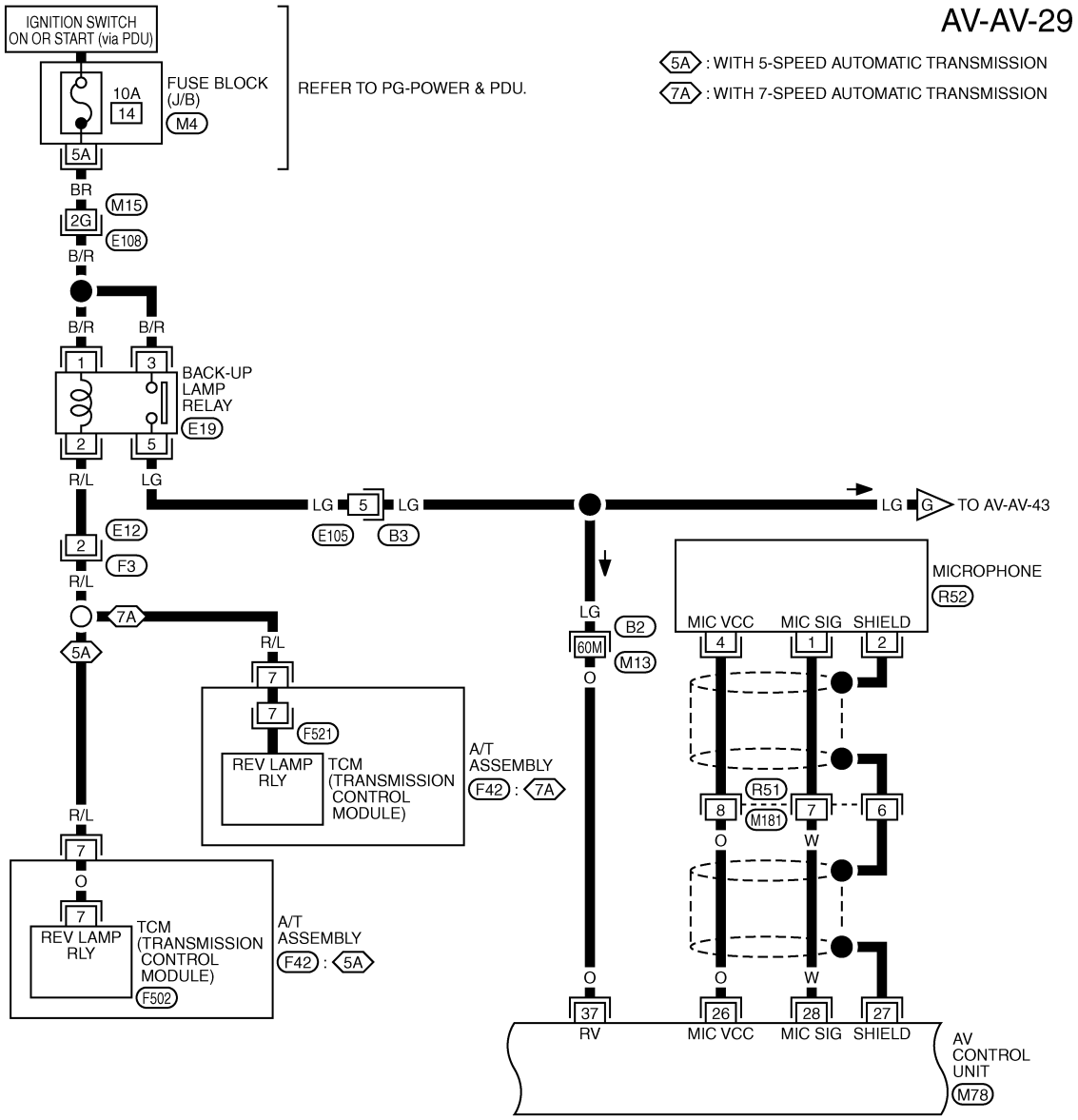


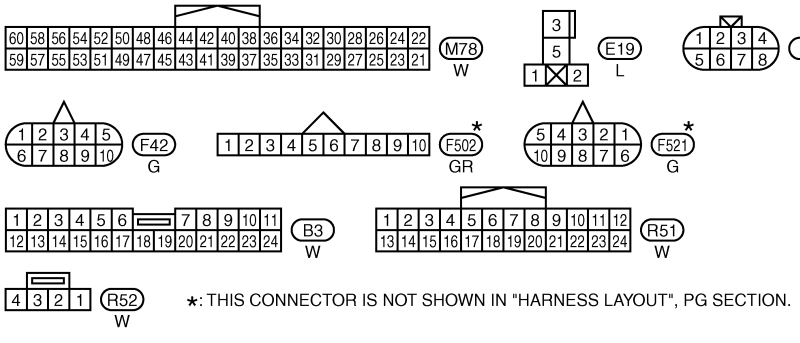


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8283E

AV-AV-29

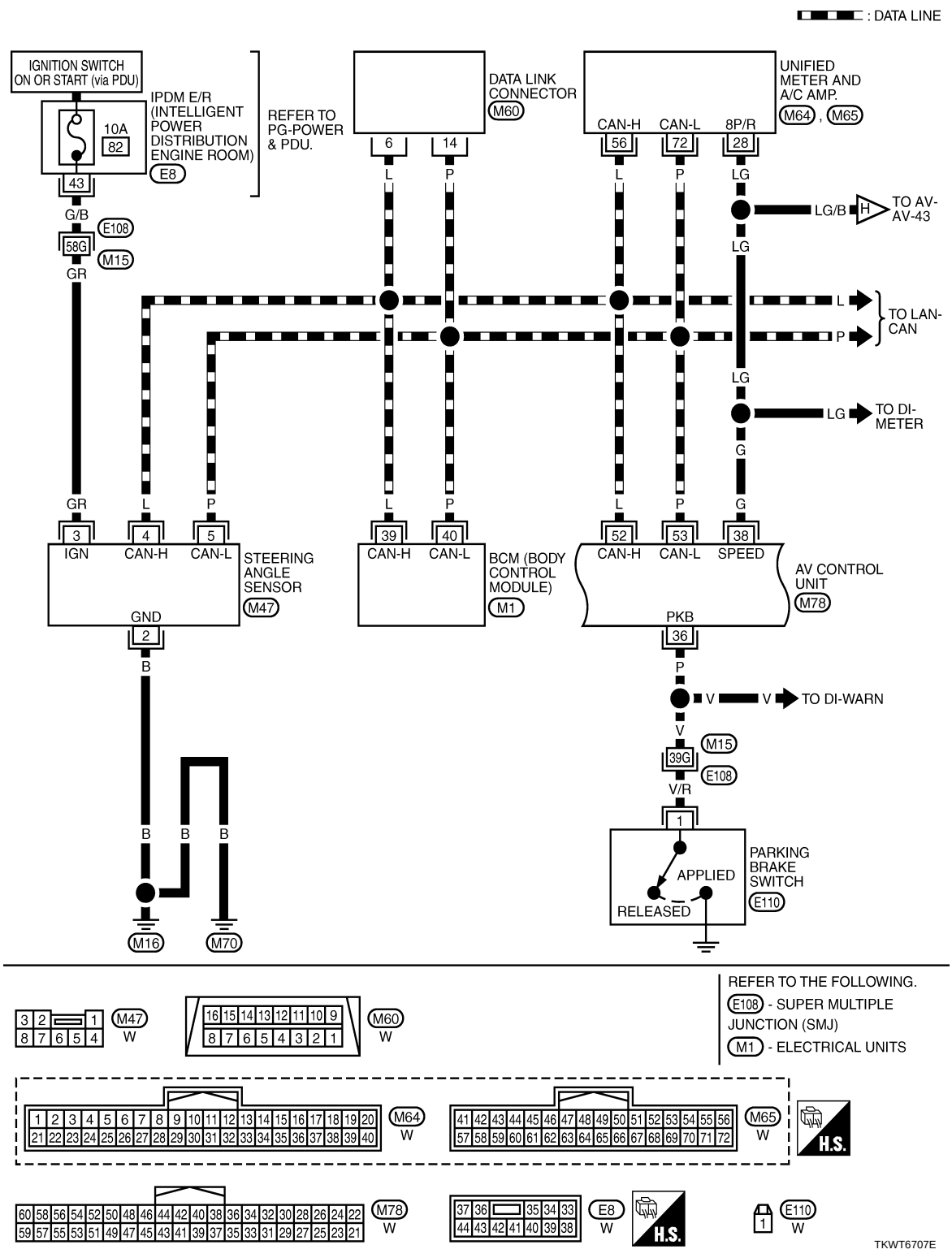




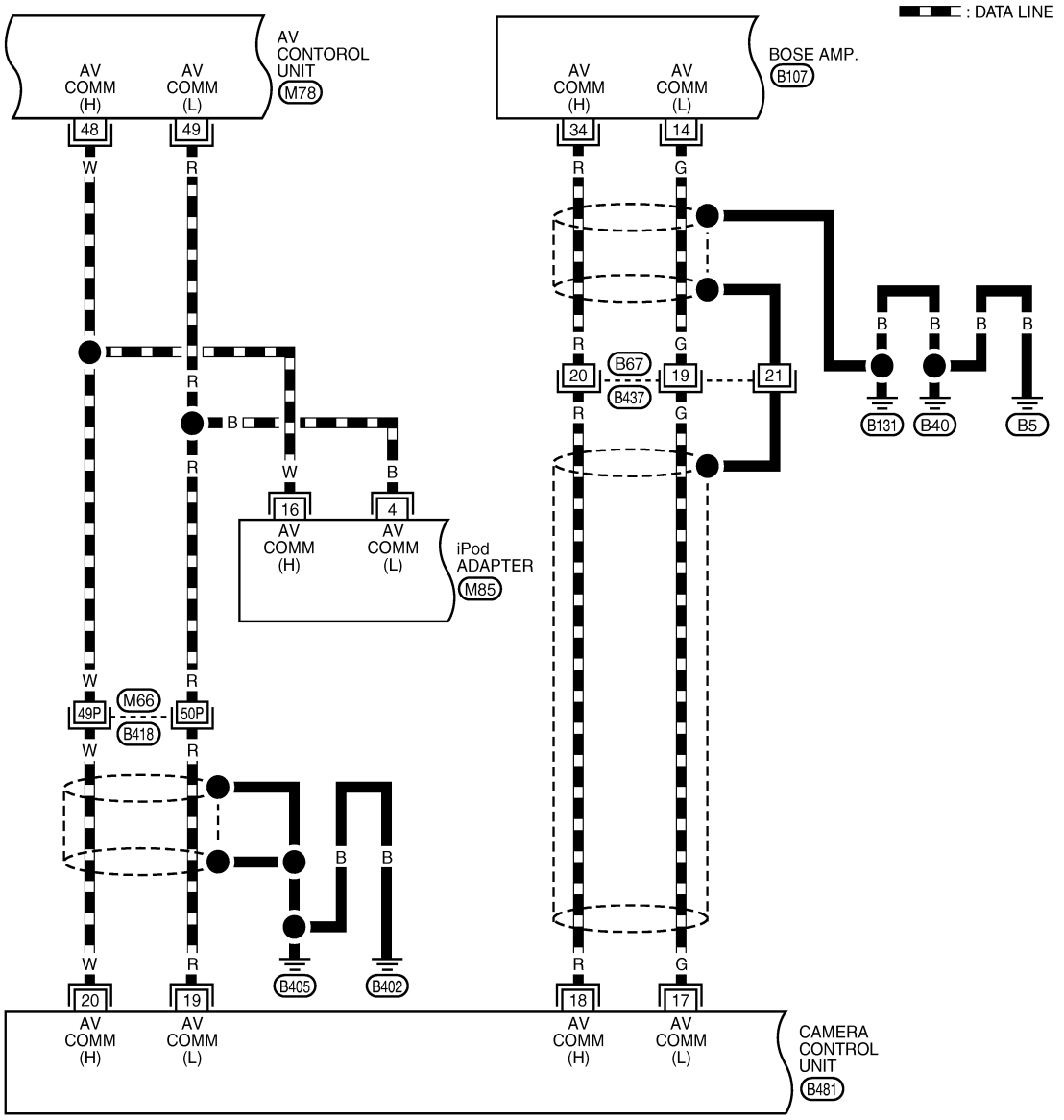
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

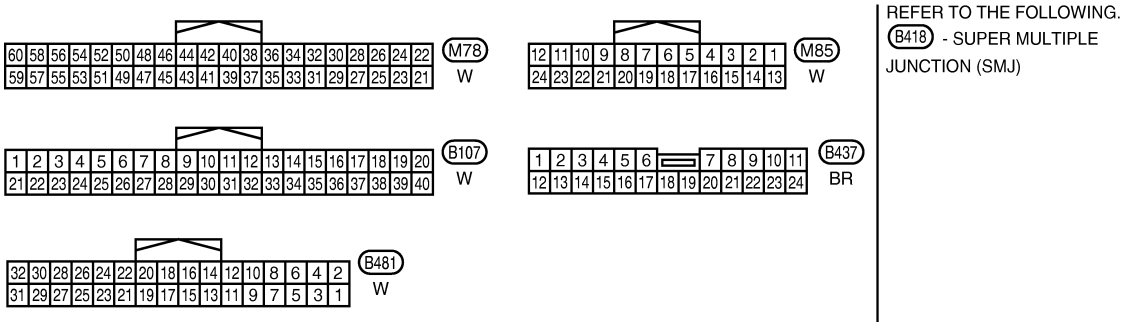
TKWT8284E

AV-AV-30


: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
G/B
E108
58G
M15
GR
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
L
P
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56
72
28
L
P
LG
LG/B H TO AV-AV-43
LG
L
P
TO LAN-CAN
LG
LG TO DI-METER
G
GR
L
P
3
4
5
IGN
CAN-H
CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE) M1
52
53
38
CAN-H
CAN-L
SPEED
AV CONTROL UNIT M78
PKB
36
P
V
V TO DI-WARN
V
M15
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B
B
B
M16
M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47
W
M60
W
M64
W
M65
W
H.S.
M78
W
E8
W
E110
W
TKWT6707E

AV-AV-31

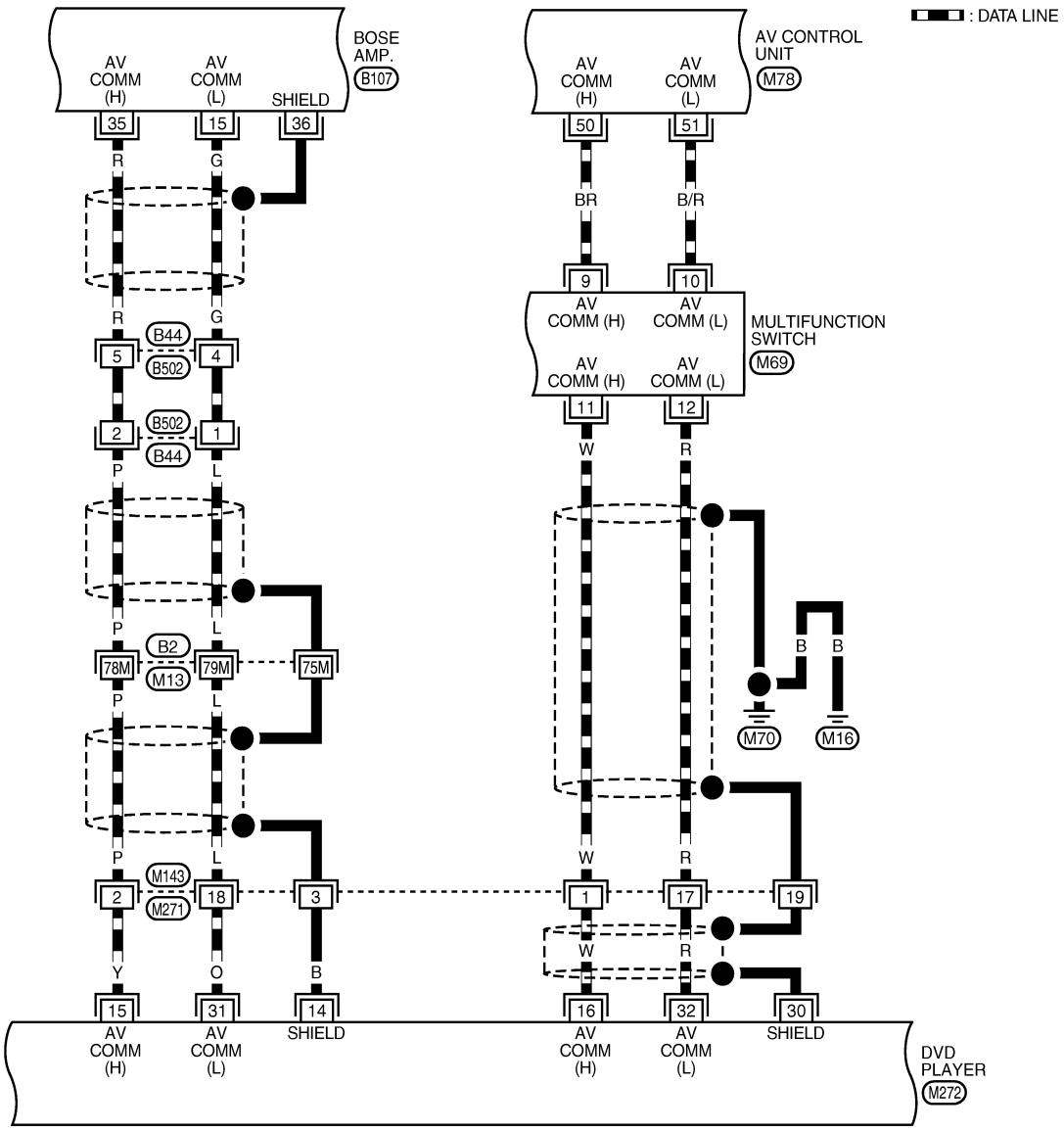


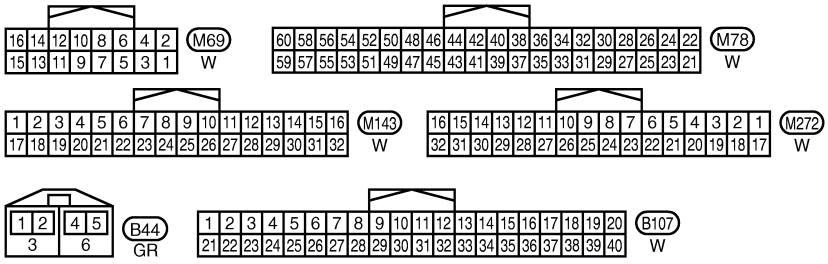


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6708E

AV-AV-32

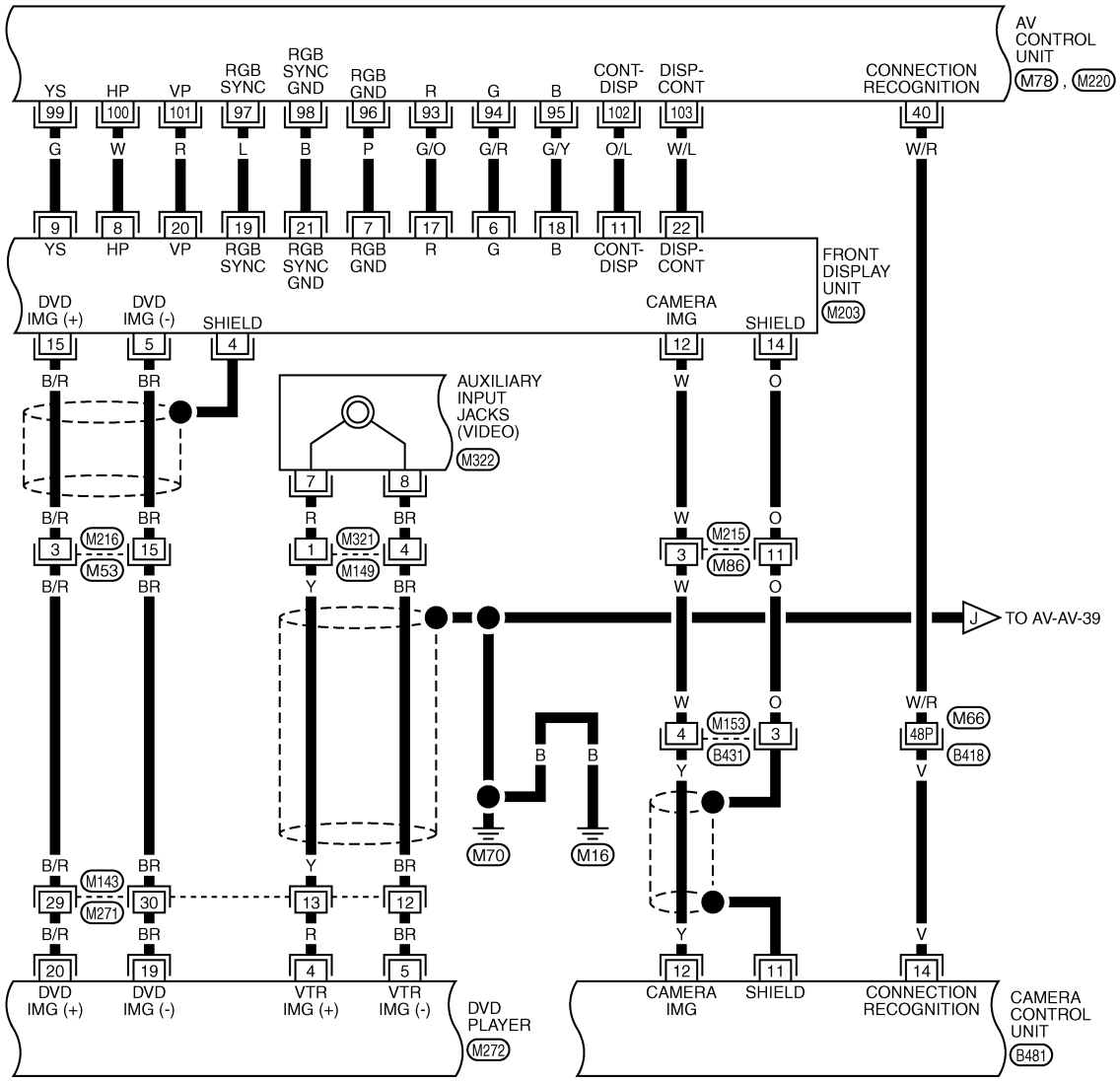


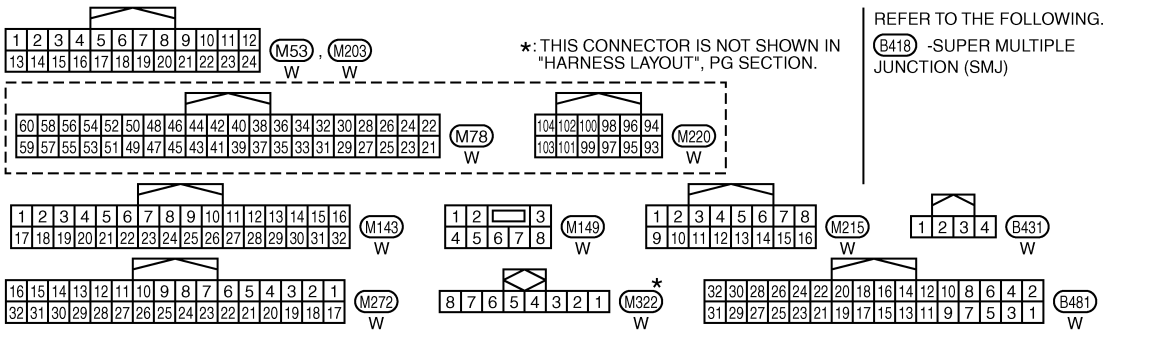


REFER TO THE FOLLOWING.
(B2) - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6709E

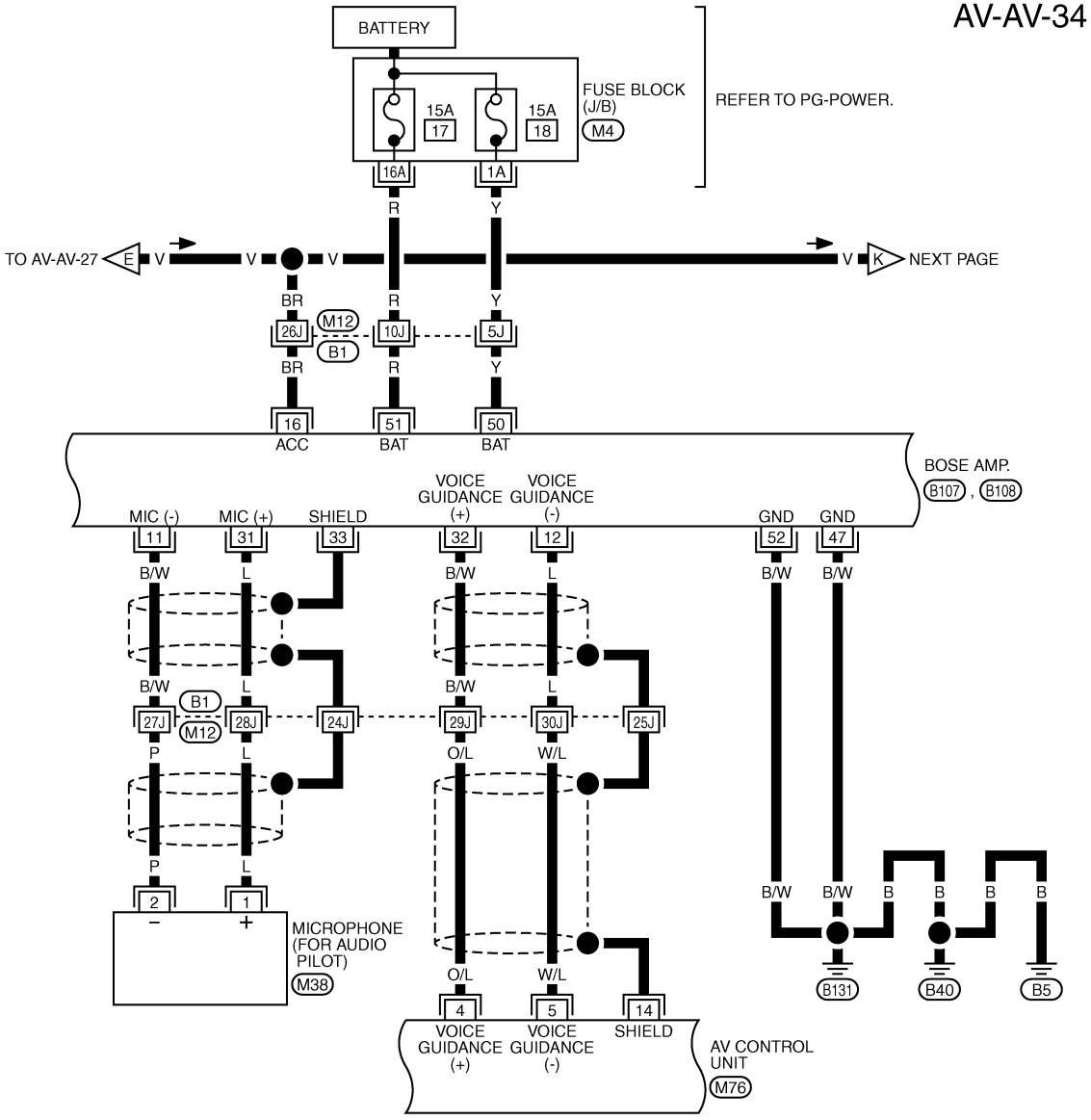
AV-AV-33

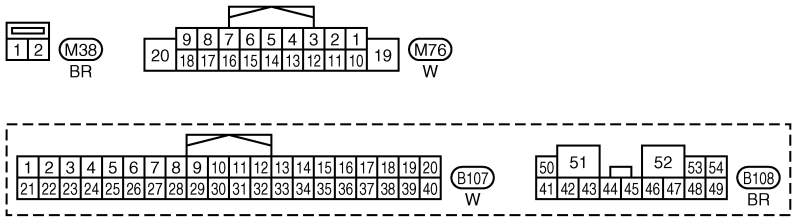




TKWT8285E

AV-AV-34

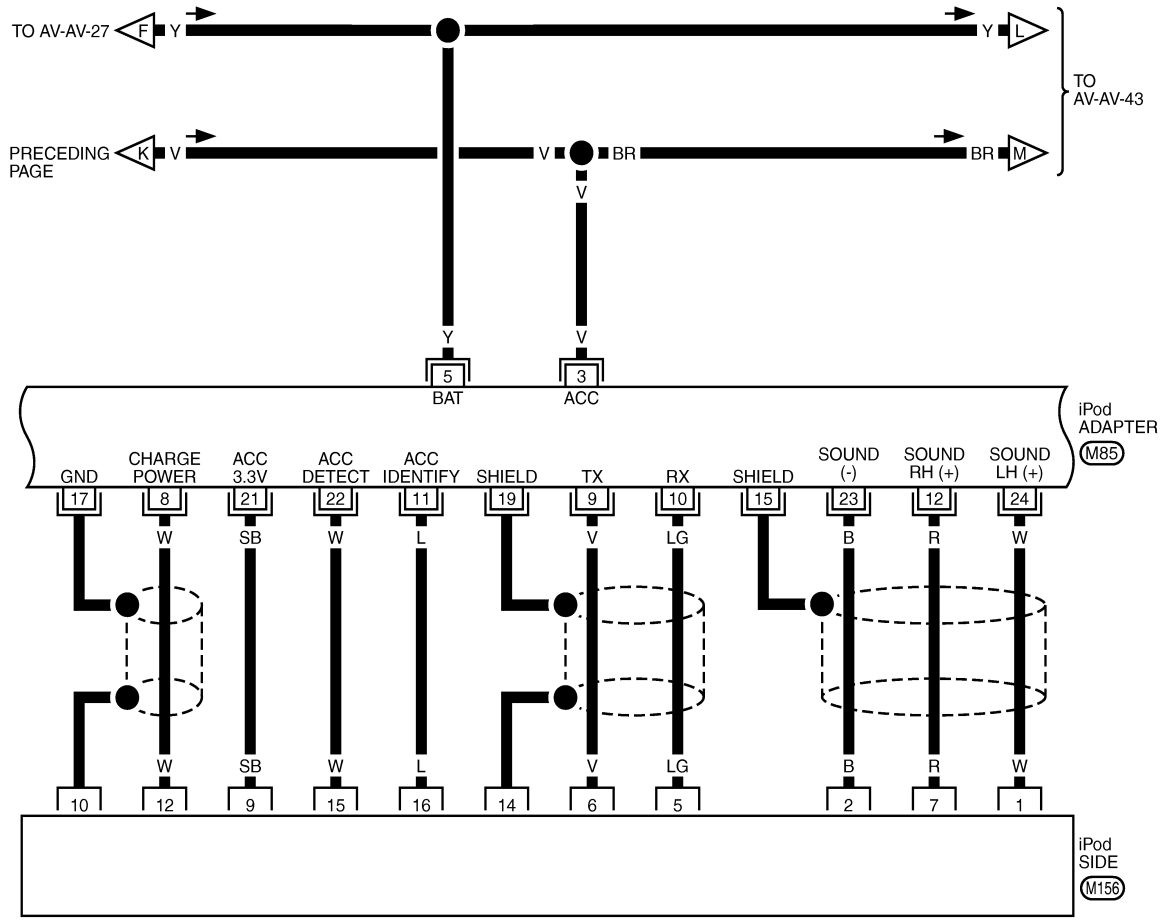


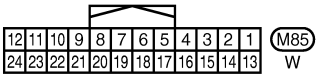


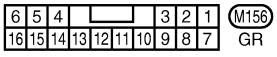
REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8286E

AV-AV-35

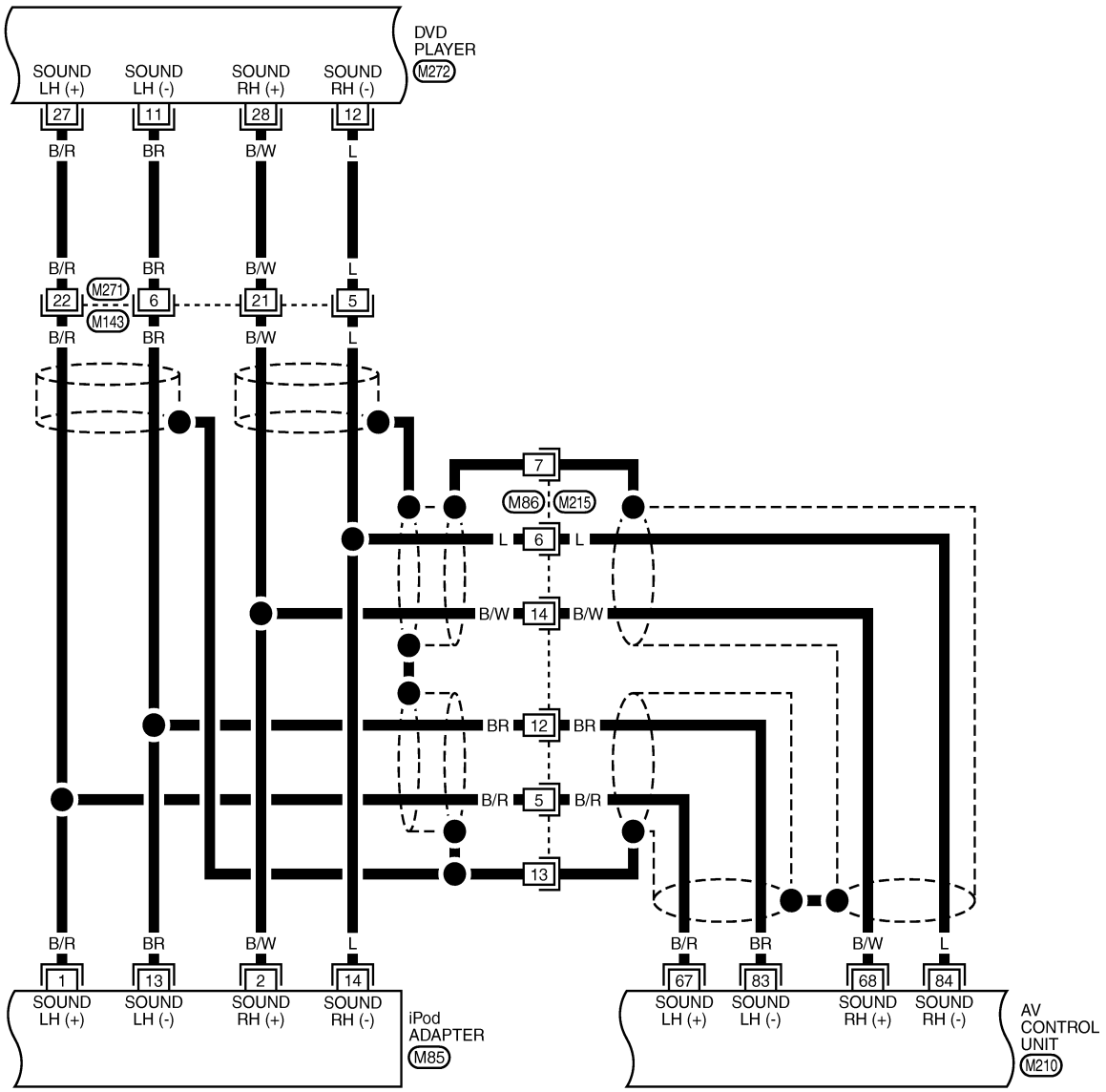


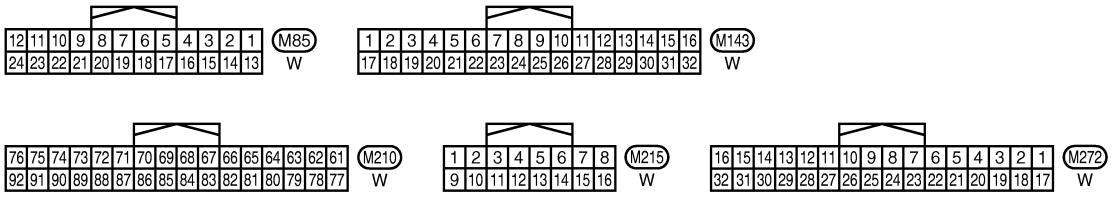




TKWT6713E

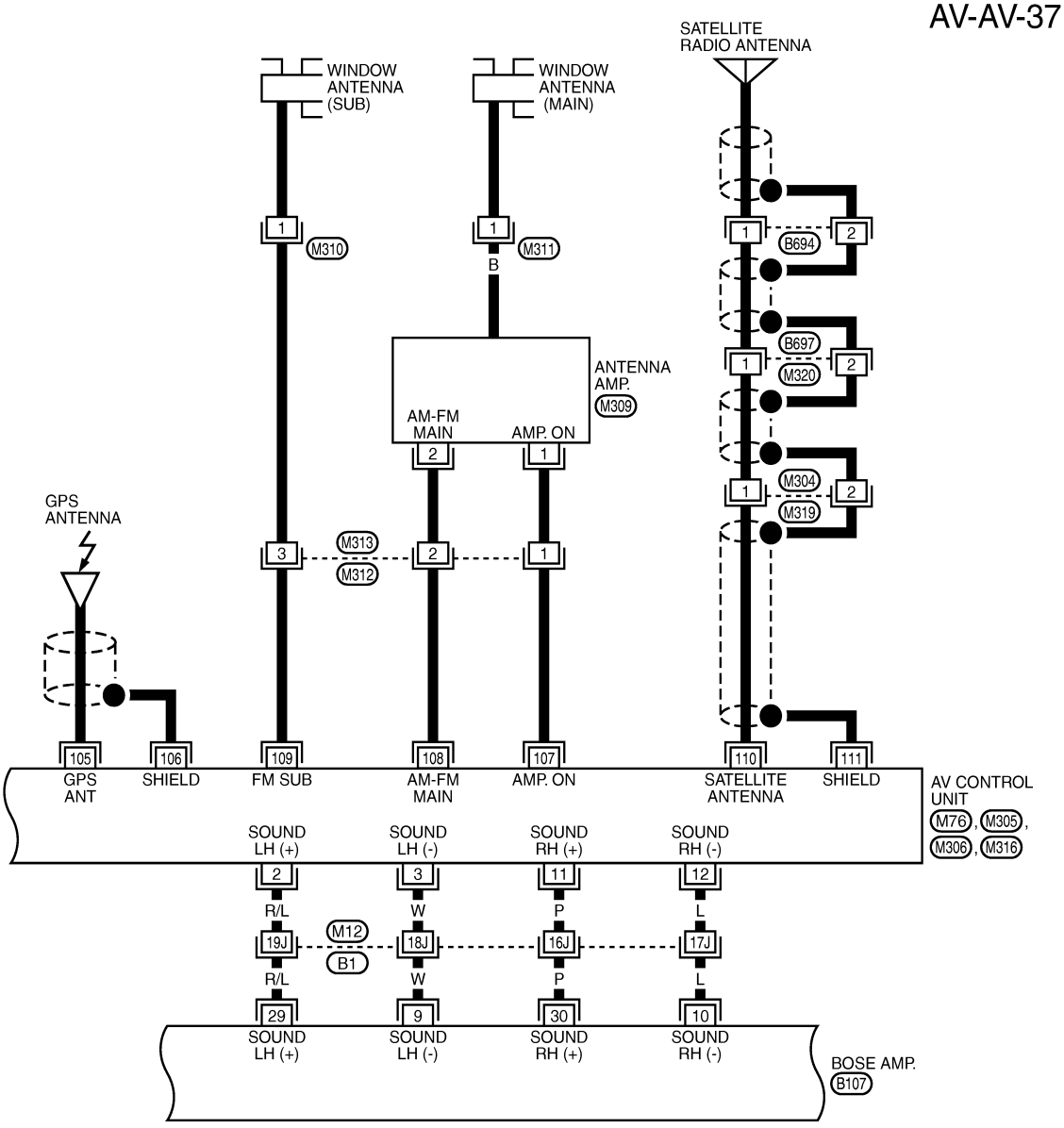
AV-AV-36

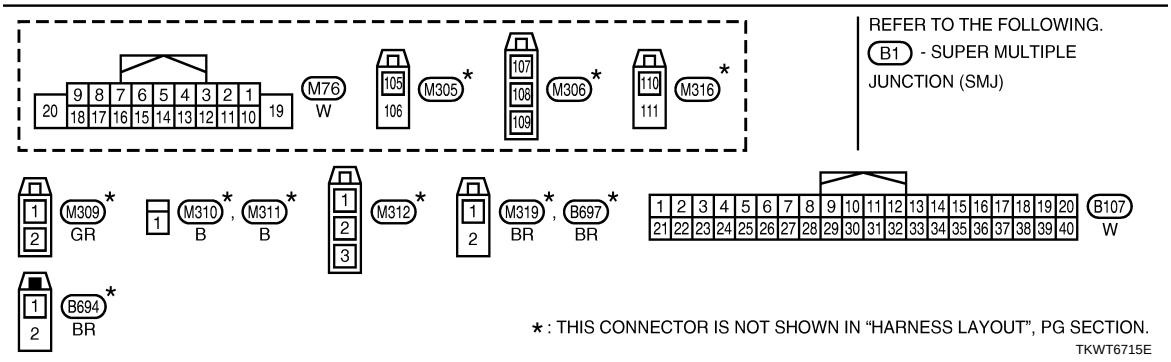




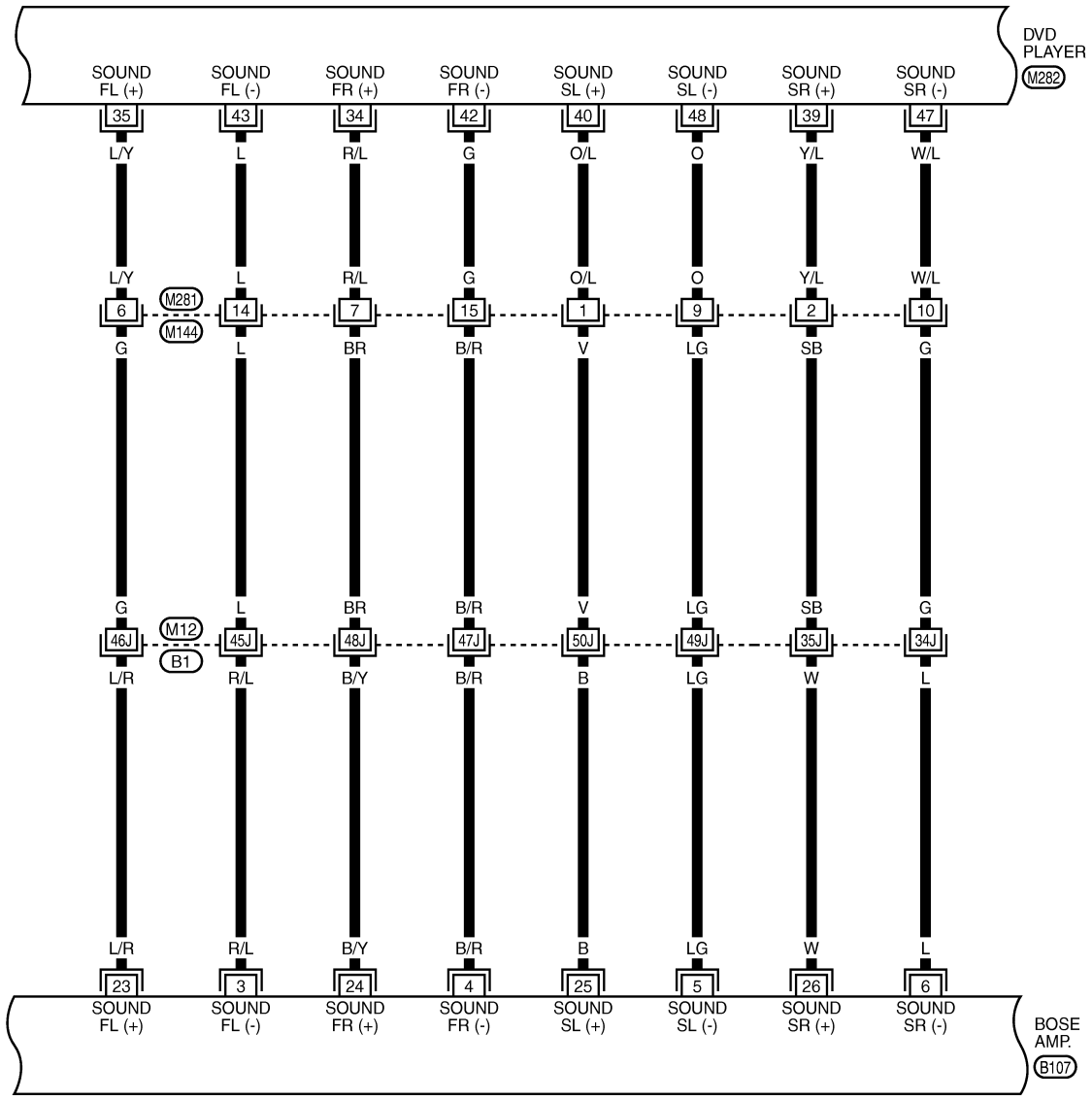
TKWT6714E

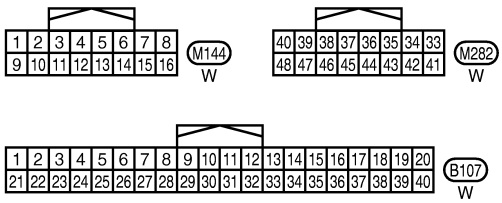
AV-AV-37


SATELLITE RADIO ANTENNA
WINDOW ANTENNA (SUB)
WINDOW ANTENNA (MAIN)
M310
M311
B
B694
B697
M320
M304
M319
ANTENNA AMP.
M309
AM-FM MAIN
AMP. ON
GPS ANTENNA
M313
M312
105 GPS ANT
106 SHIELD
109 FM SUB
108 AM-FM MAIN
107 AMP. ON
110 SATELLITE ANTENNA
111 SHIELD
AV CONTROL UNIT
M76, M305, M306, M316
SOUND LH (+)
SOUND LH (-)
SOUND RH (+)
SOUND RH (-)
R/L
W
P
L
M12
B1
19J
18J
16J
17J
29
9
30
10
BOSE AMP.
B107


M76 W
M305 *
M306 *
M316 *
M309 * GR
M310 * B
M311 * B
M312 *
M319 * BR
B697 * BR
B694 * BR
B107 W
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)
* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.
TKWT6715E

AV-AV-38

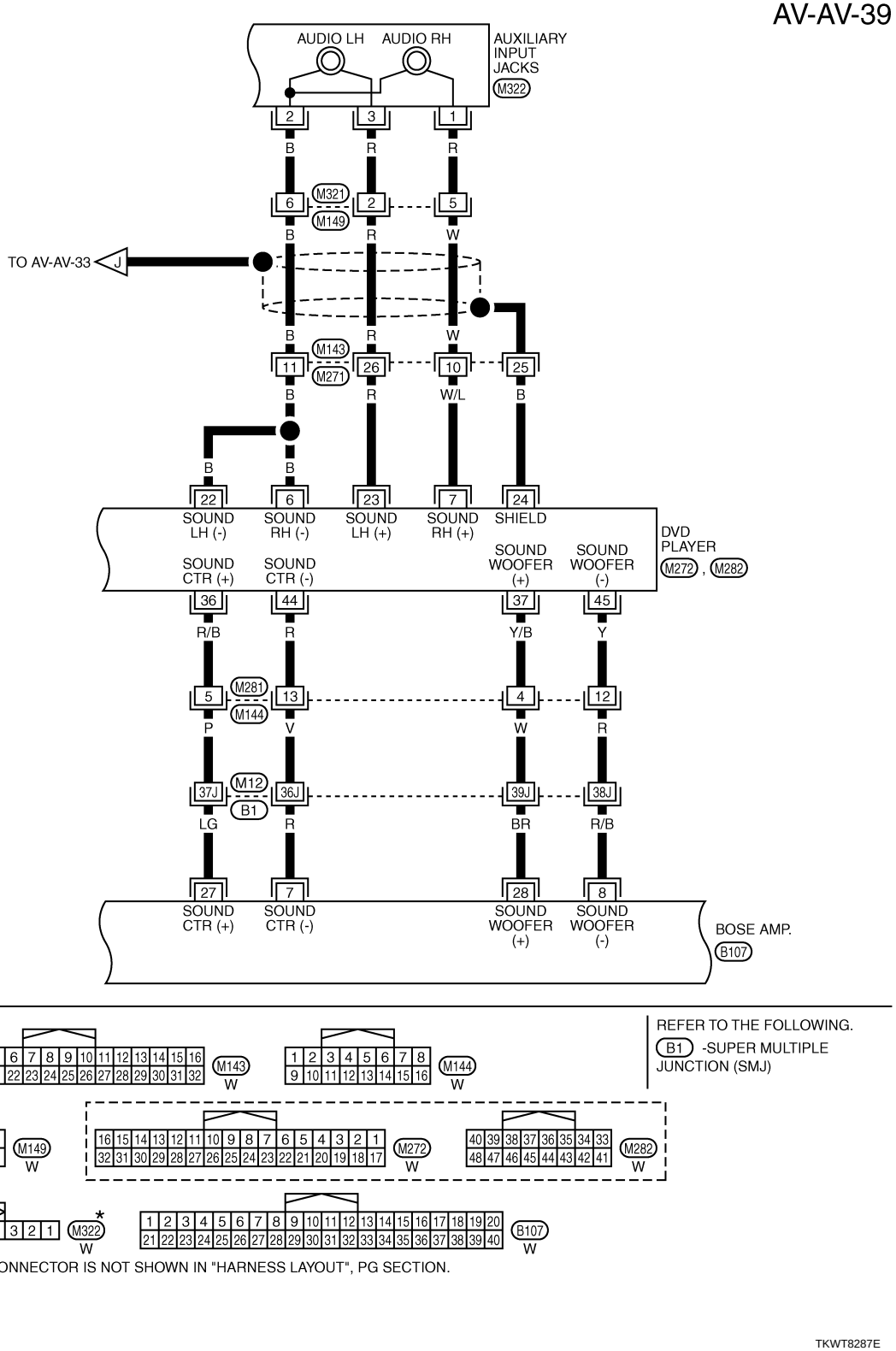




REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

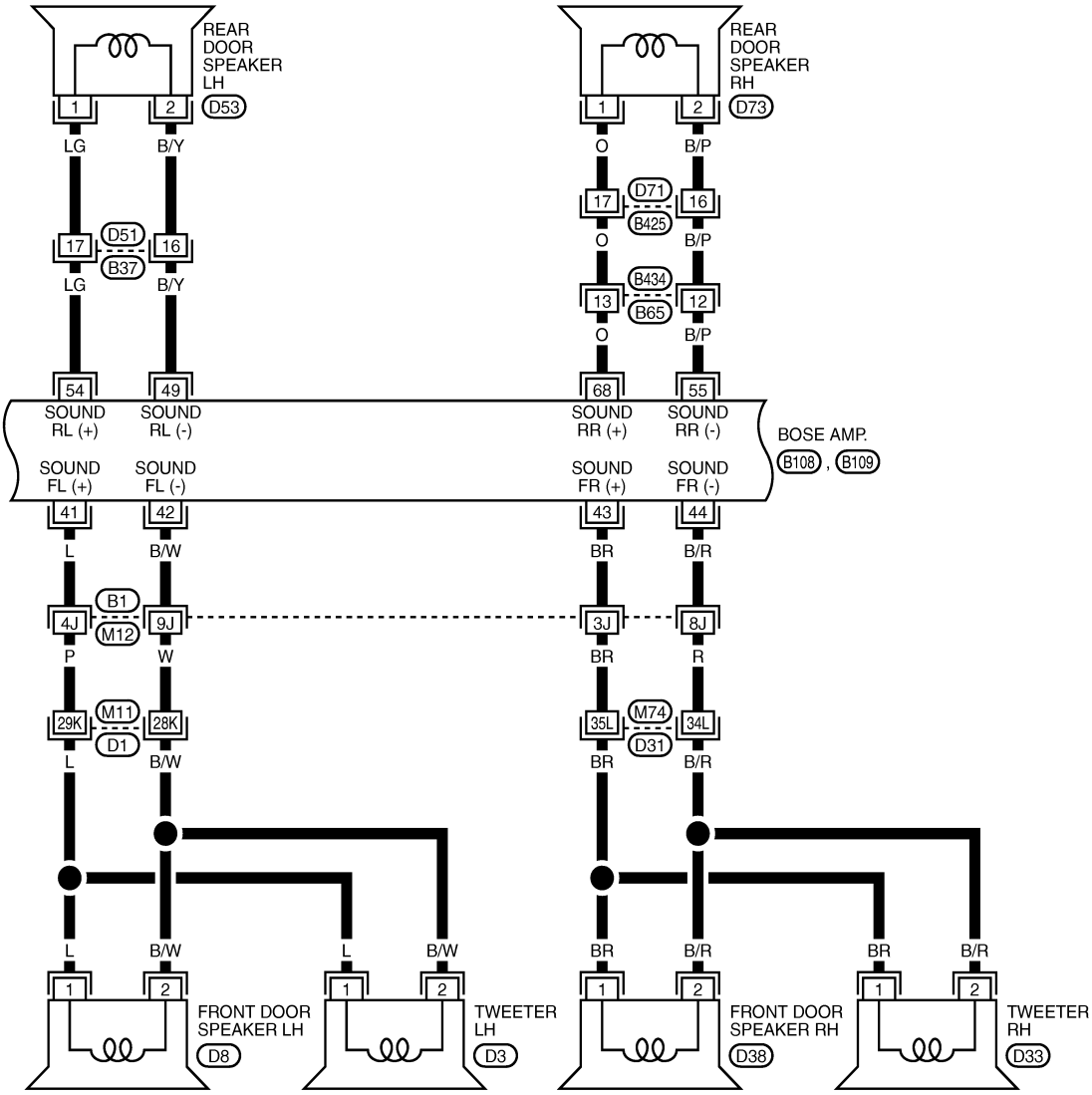
TKWT6716E

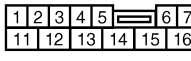
AV-AV-39

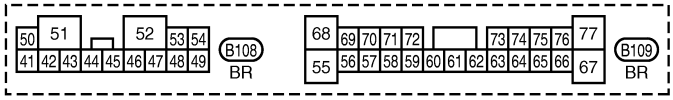


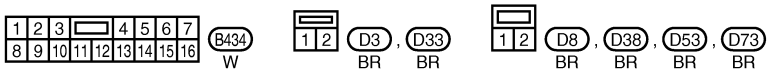
TKWT8287E

AV-AV-40





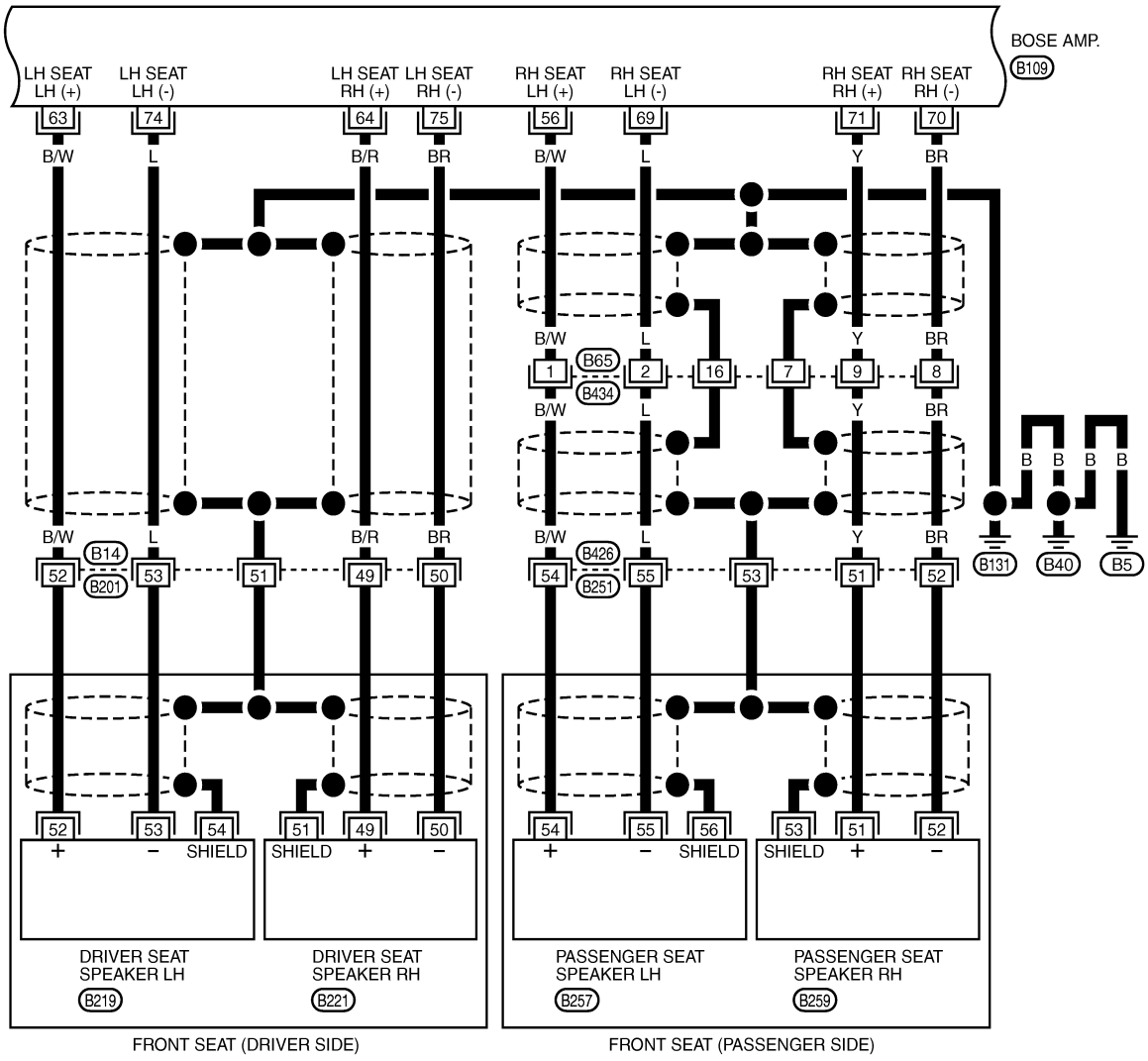


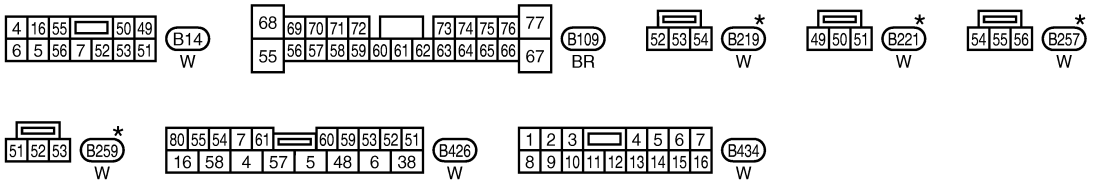


REFER TO THE FOLLOWING.
B1 , D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6718E

AV-AV-41

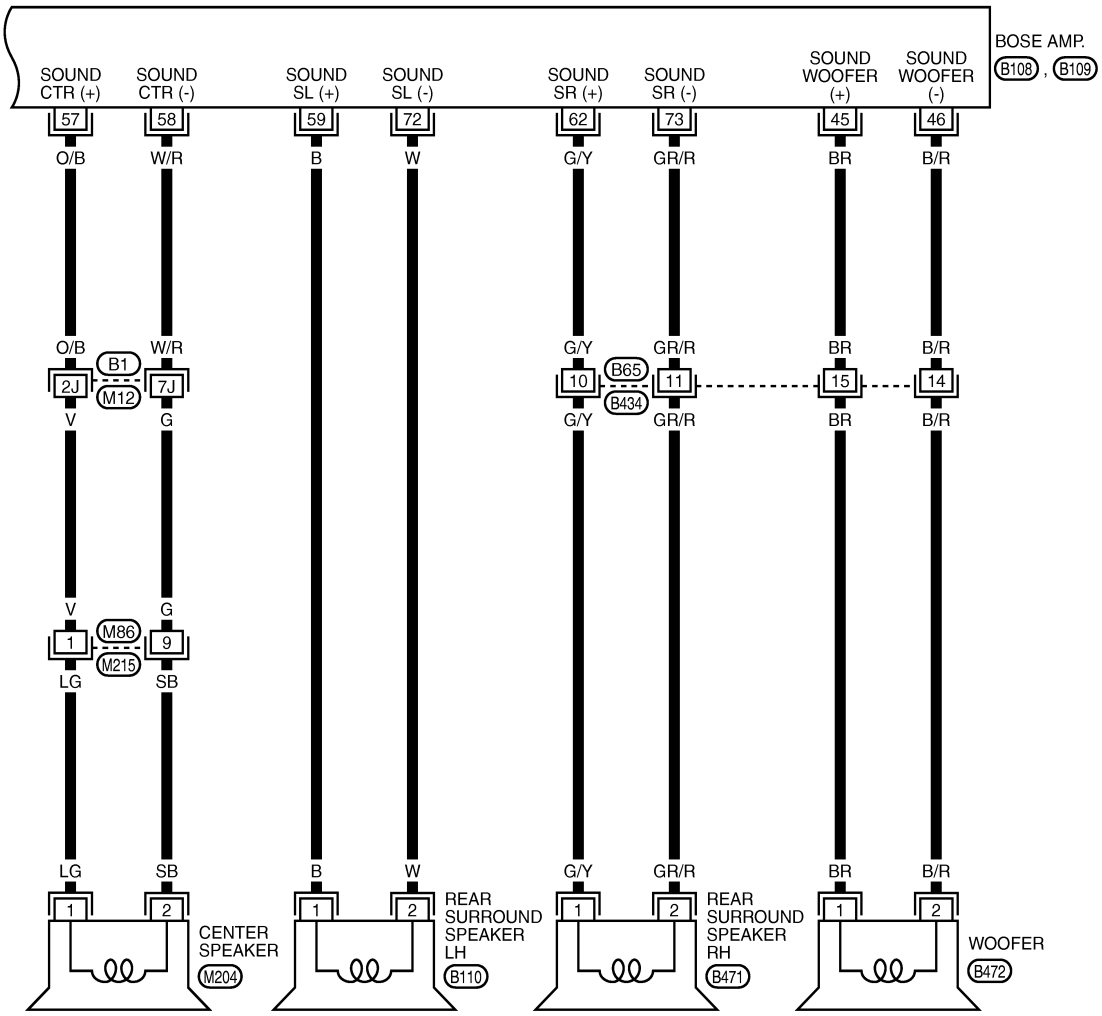


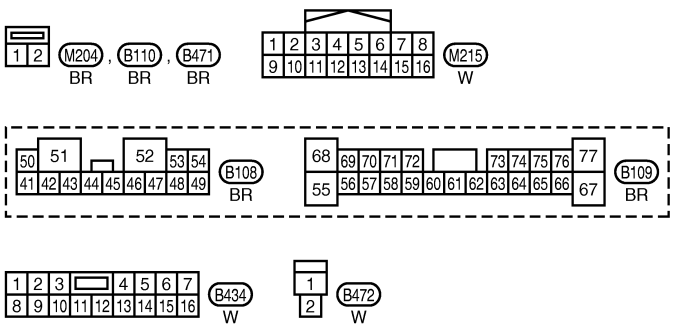


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6719E

AV-AV-42

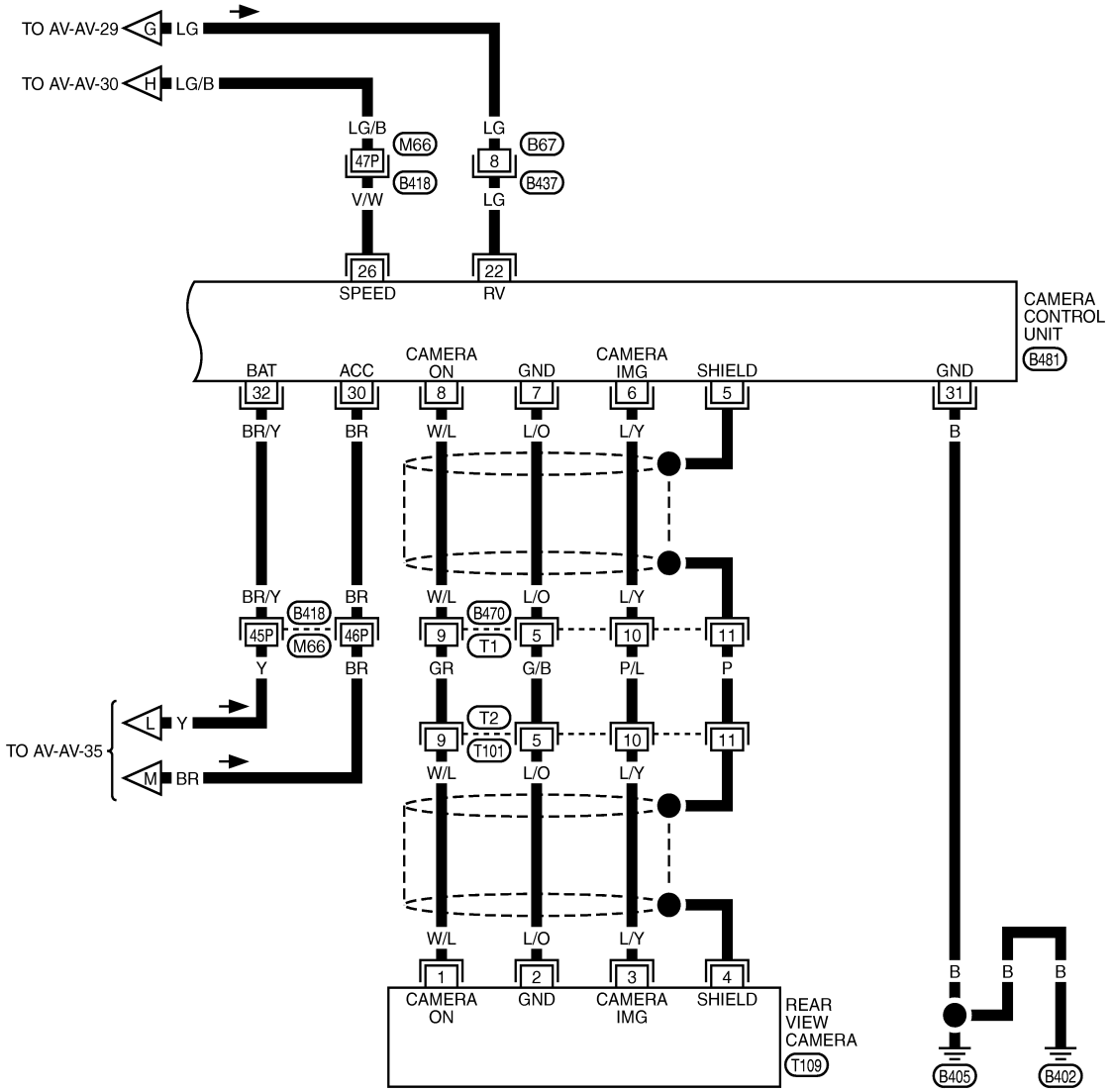


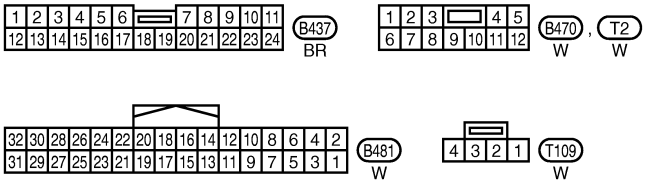


REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6720E

AV-AV-43





REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

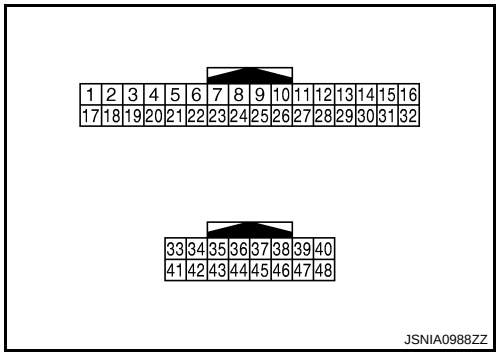
TKWT6721E

DVD PLAYER

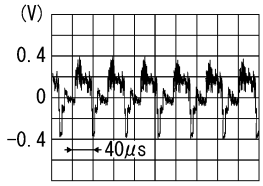
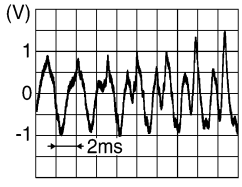
Reference Value

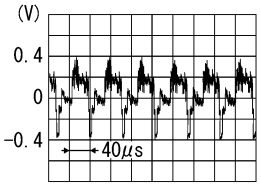
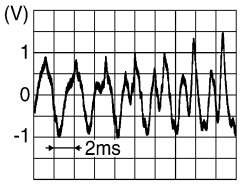
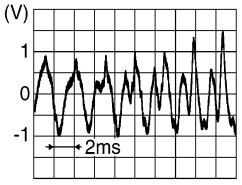
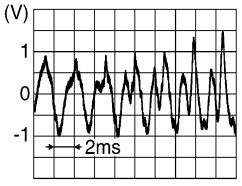
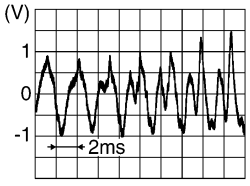
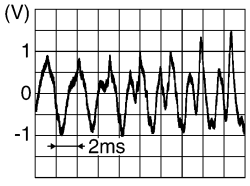
INFOID:0000000004155828

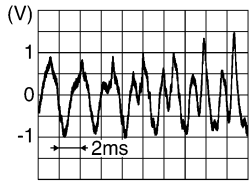
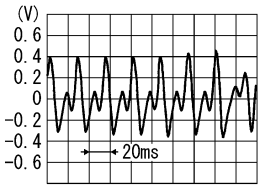
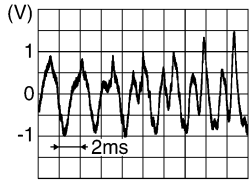
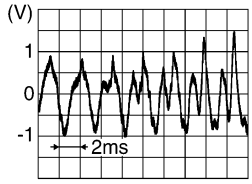
TERMINAL LAYOUT



PHYSICAL VALUES

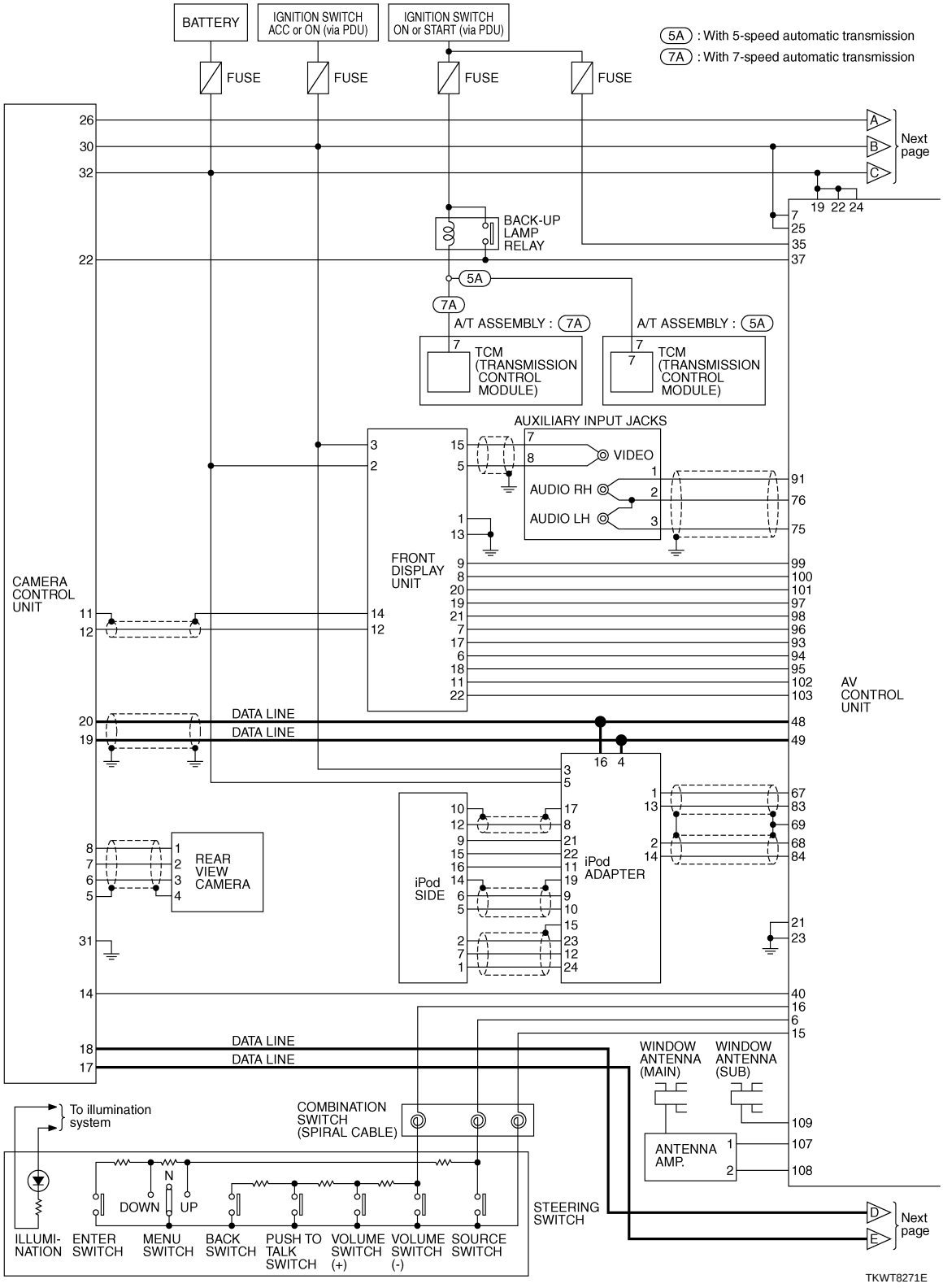
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y/R)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
2 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
4 (R)	5 (BR)	AUX image signal	Input	Ignition switch ON	When AUX image is displayed.	 SKIB2251J
7 (W/L)	6 (B)	AUX sound signal RH	Input	Ignition switch ON	AUX sound output.	 SKIB3609E
14	—	Shield	—	—	—	—
15 (Y)	—	AV communication signal (H)	Input/ Output	—	—	—
16 (W)	—	AV communication signal (H)	Input/ Output	—	—	—
17 (B/P)	Ground	Ground	—	Ignition switch ON	—	0 V
18 (R/L)	Ground	Illumination signal	Input	Ignition switch ON	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12 V

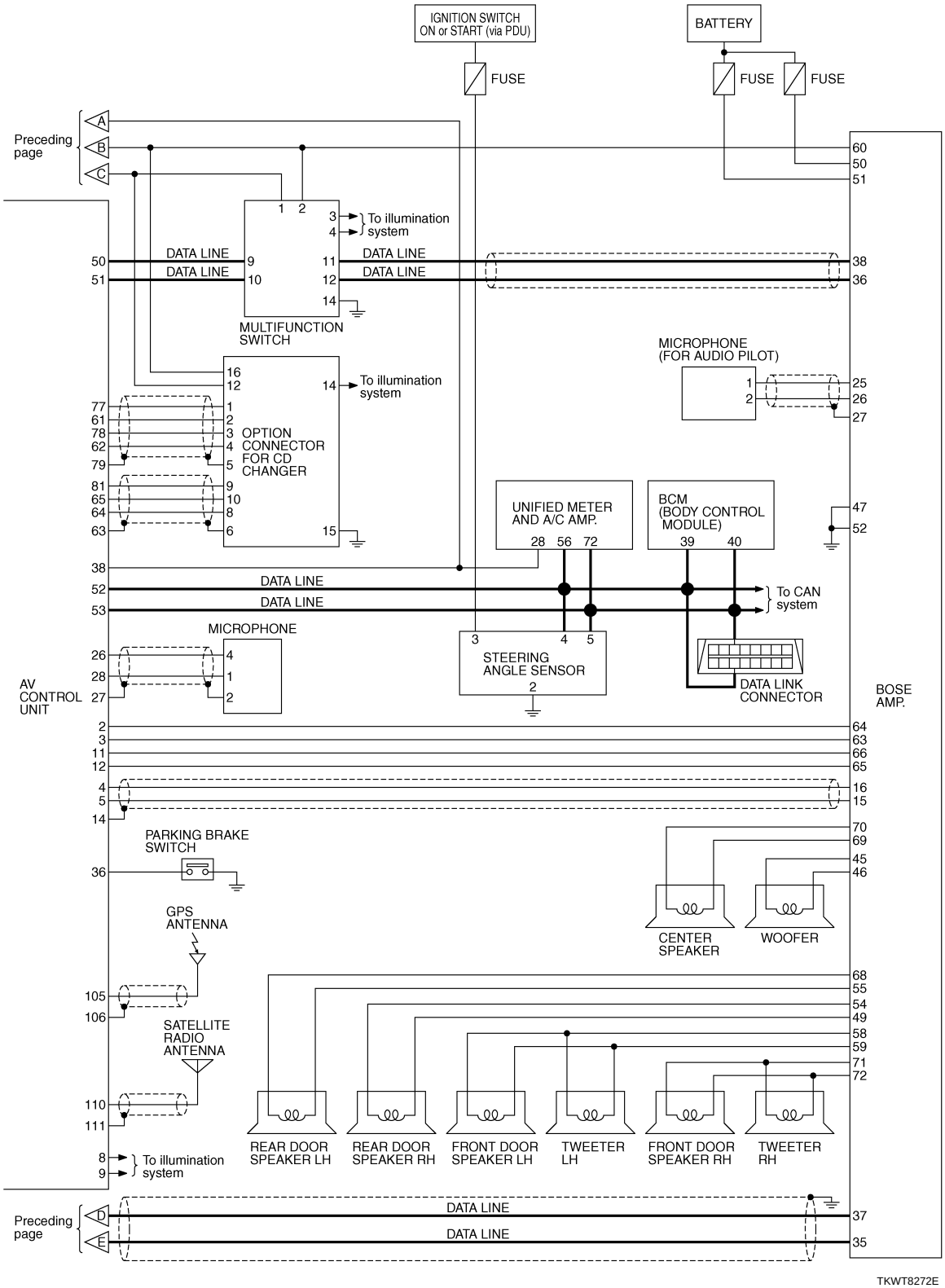
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
20 (B/R)	19 (BR)	Composite image signal (DVD and AUX images)	Output	Ignition switch ON	When DVD or AUX image is displayed.	 SKIB2251J
23 (R)	22 (B)	AUX sound signal LH	Input	Ignition switch ON	AUX sound output.	 SKIB3609E
24	—	Shield	—	—	—	—
27 (B/R)	11 (BR)	AUX sound signal LH	Output	Ignition switch ON	AUX sound output.	 SKIB3609E
28 (B/W)	12 (L)	AUX sound signal RH	Output	Ignition switch ON	AUX sound output.	 SKIB3609E
30	—	Shield	—	—	—	—
31 (O)	—	AV communication signal (L)	Input/ Output	—	—	—
32 (R)	—	AV communication signal (L)	Input/ Output	—	—	—
34 (R/L)	42 (G)	DVD surround signal front RH	Output	Ignition switch ON	When the DVD player is played.	 SKIB3609E
35 (L/Y)	43 (L)	DVD surround signal front LH	Output	Ignition switch ON	When the DVD player is played.	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
36 (R/B)	44 (R)	DVD surround signal center	Output	Ignition switch ON	When the DVD player is played.	 SKIB3609E
37 (Y/B)	45 (Y)	DVD surround signal woofer	Output	Ignition switch ON	When the DVD player is played.	 PKIB6116J
39 (Y/L)	47 (W/L)	DVD surround signal rear RH	Output	Ignition switch ON	When the DVD player is played.	 SKIB3609E
40 (O/L)	48 (O)	DVD surround signal rear LH	Output	Ignition switch ON	When the DVD player is played.	 SKIB3609E
49 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

Schematic - BOSE Audio 2ch System -

INFOID:0000000004380468





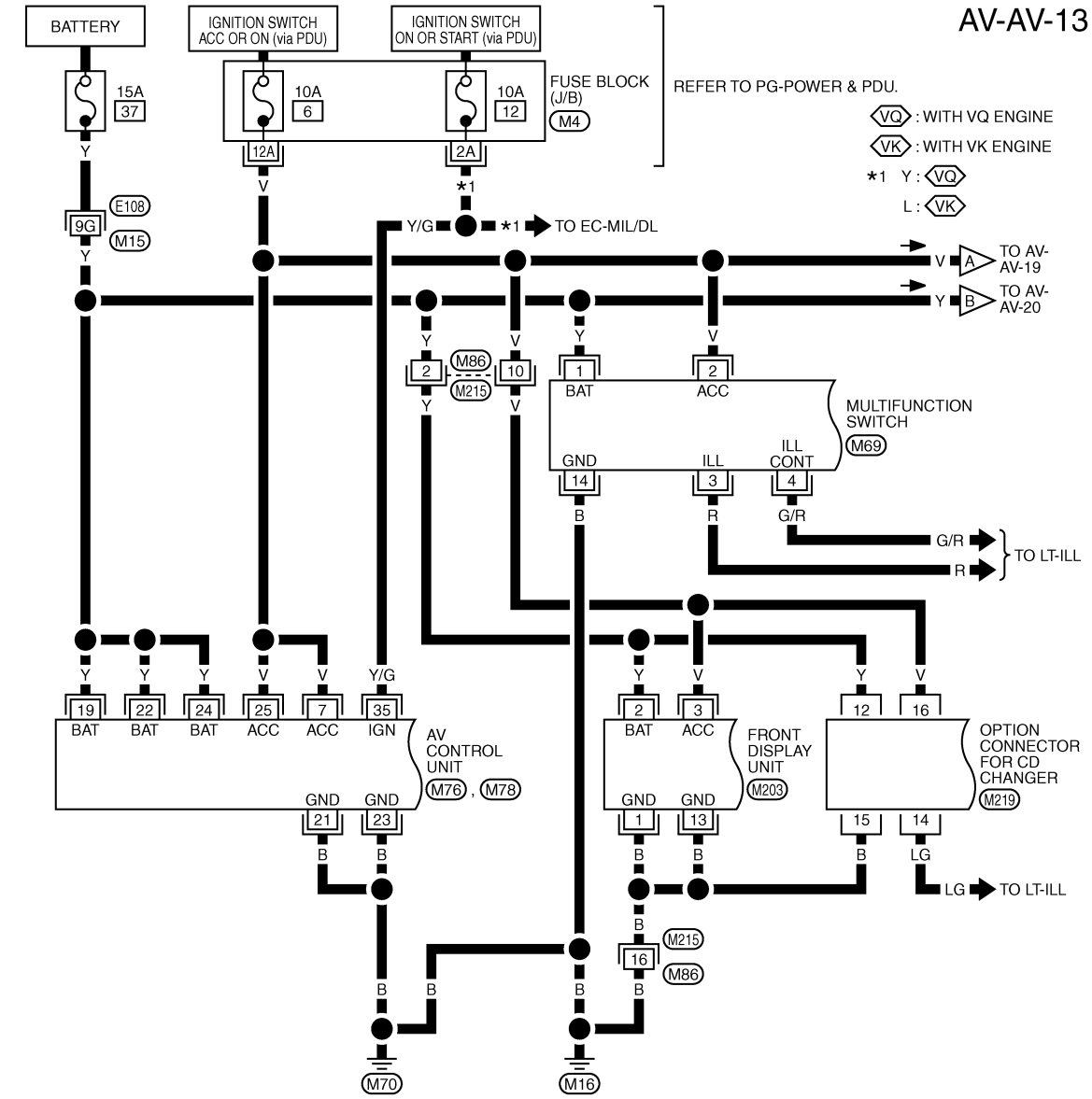
TKWT8272E

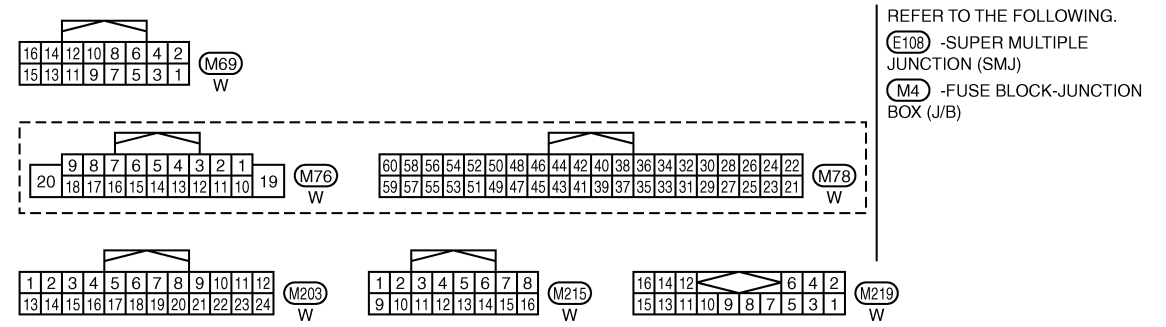
Wiring Diagram - AV - / BOSE Audio 2ch System

INFOID:0000000004380469

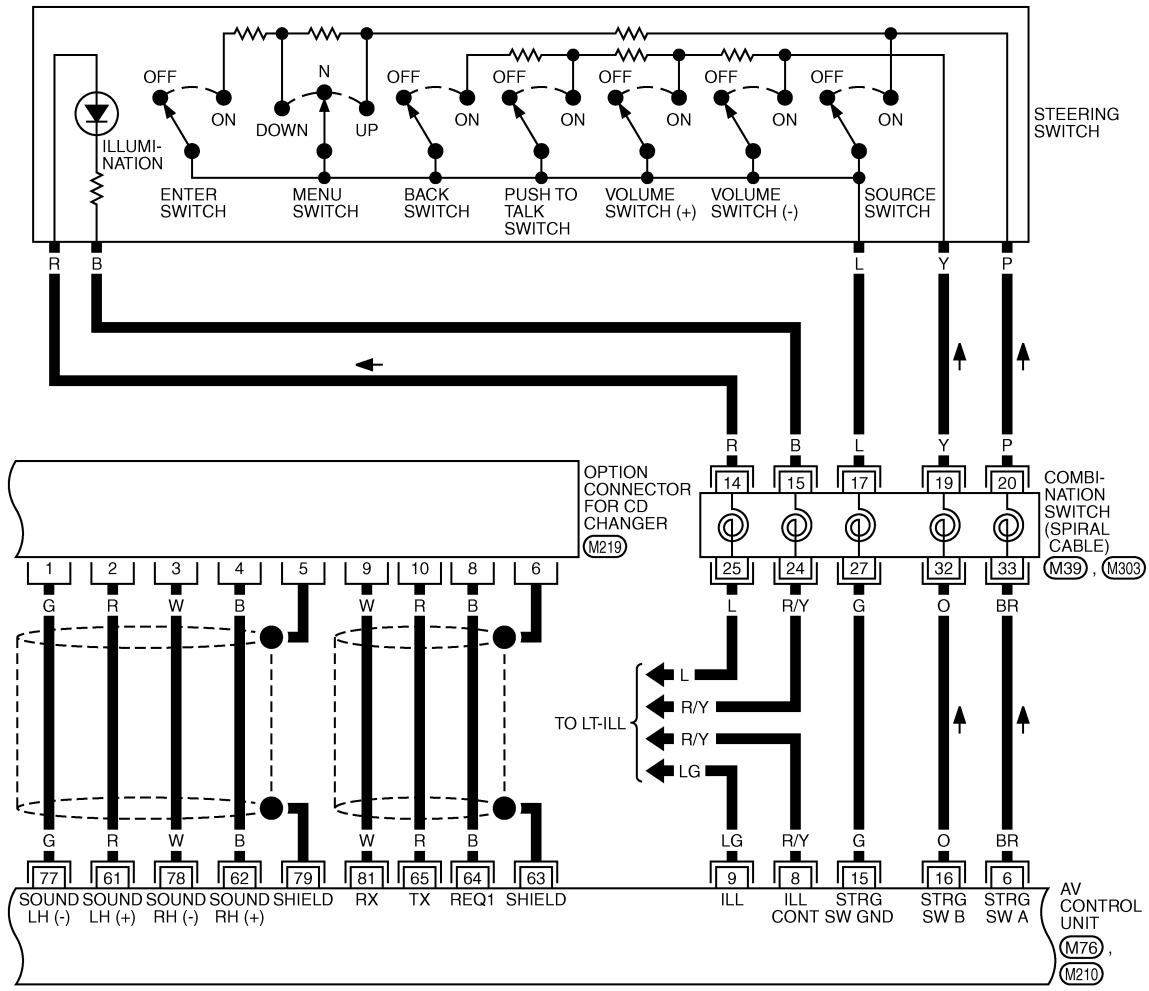
NOTE:

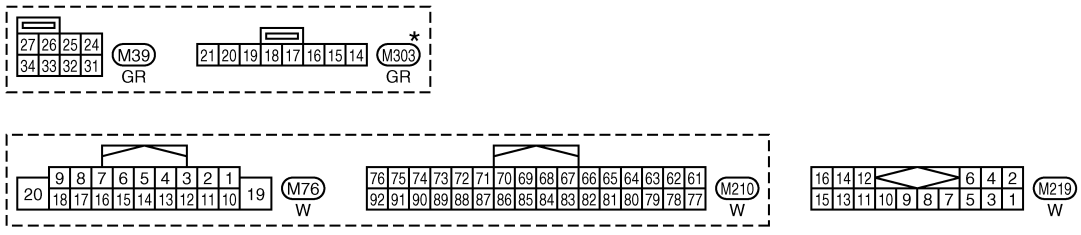
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.





TKWT8273E

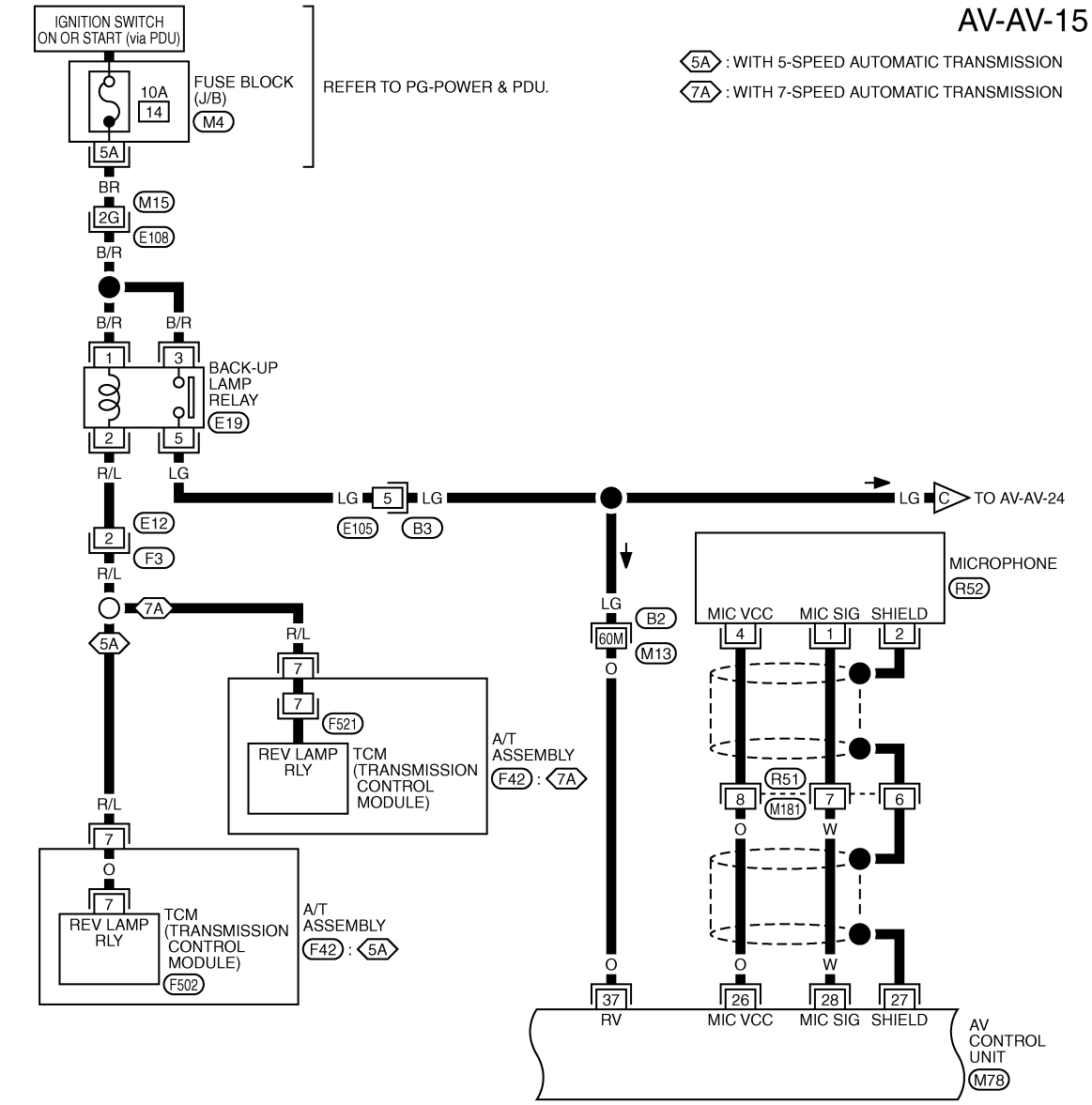


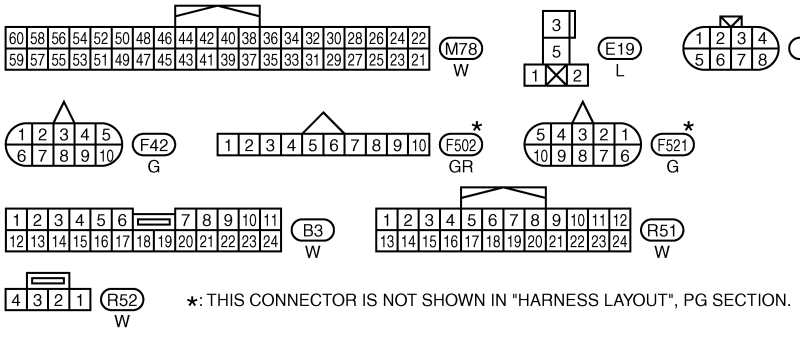


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8274E

AV-AV-15

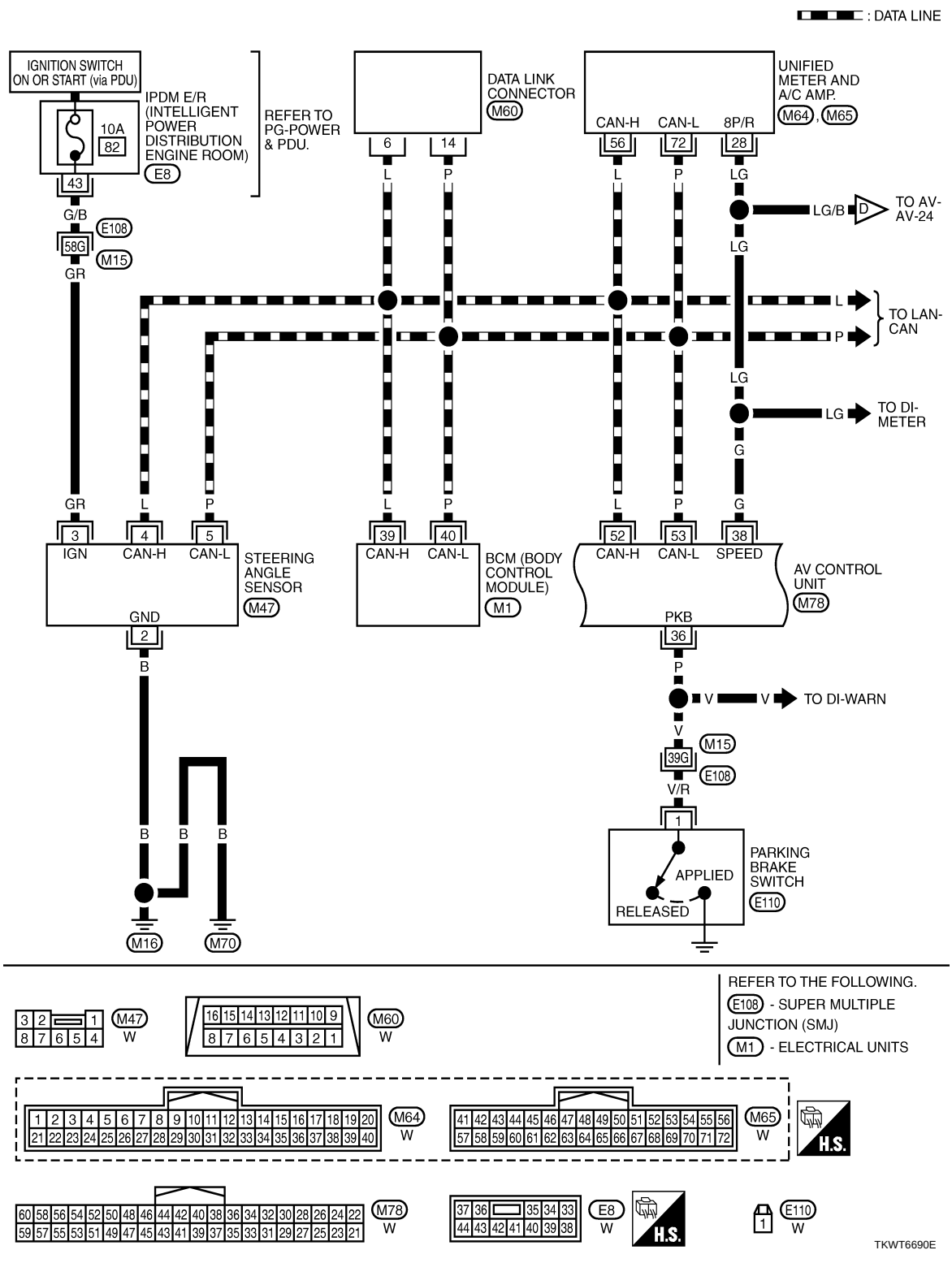


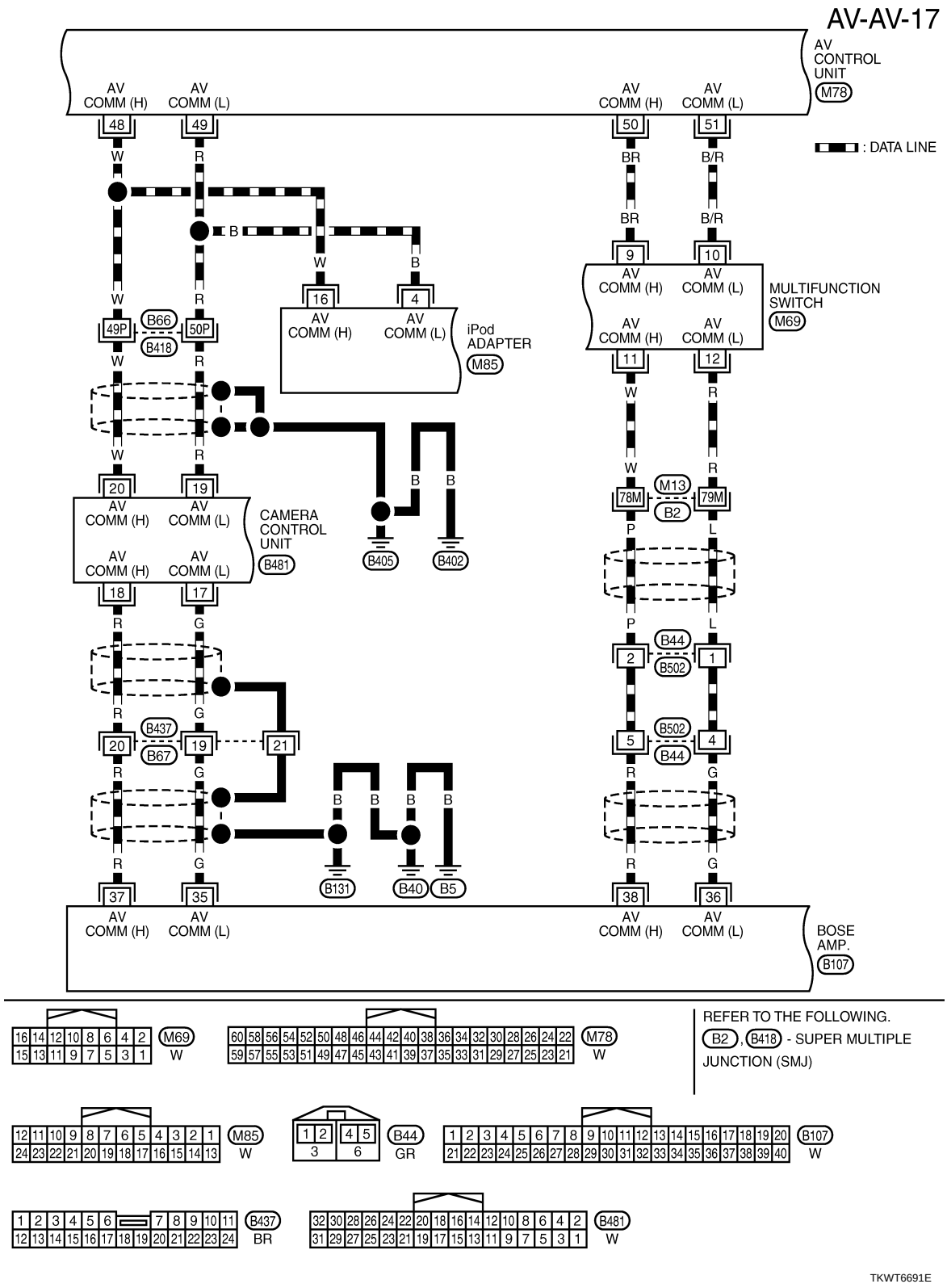


REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

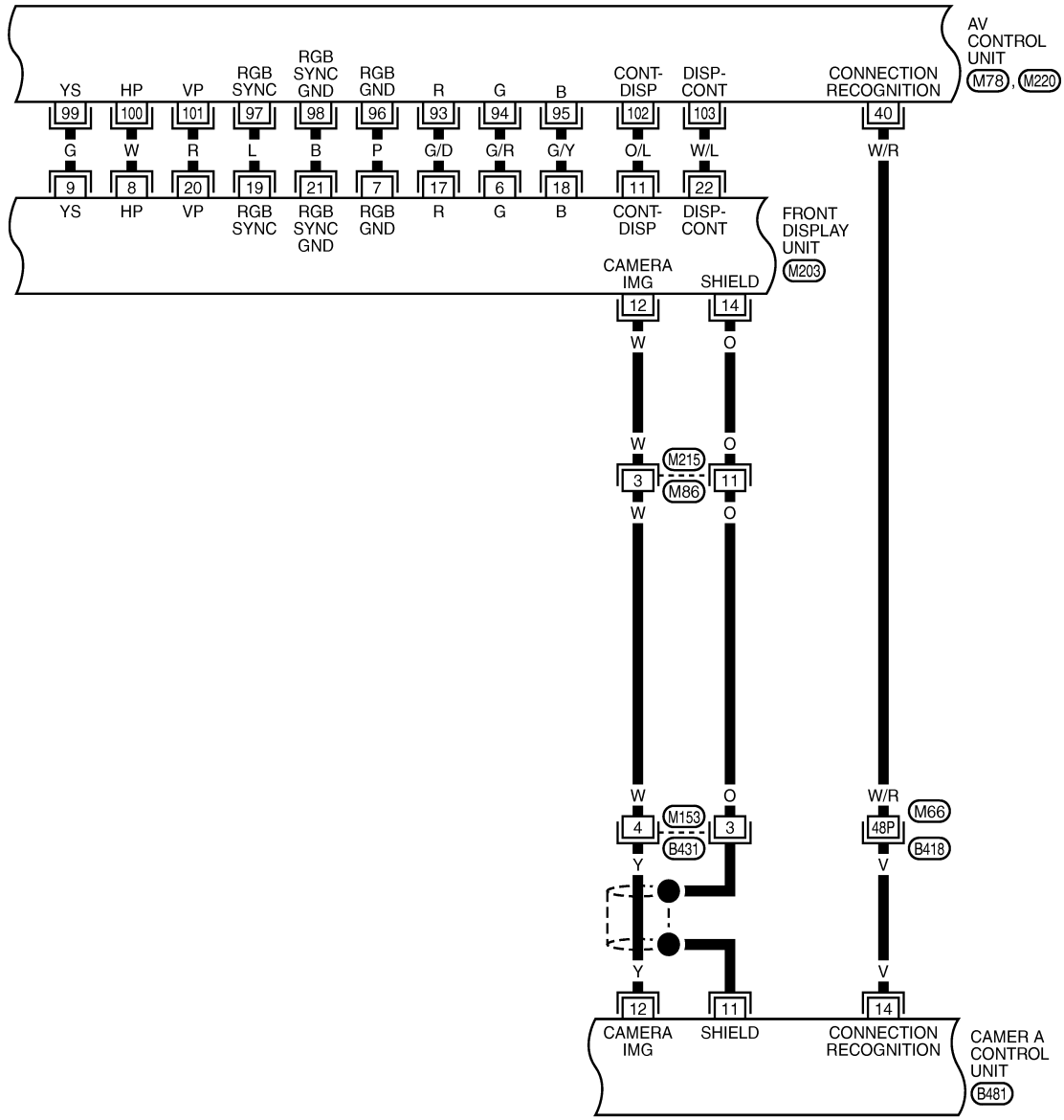
TKWT8275E

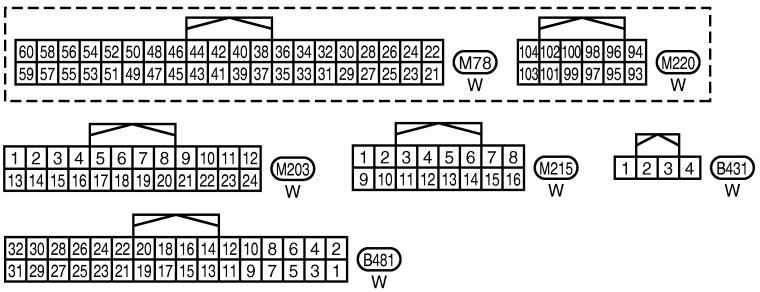
AV-AV-16


: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
UNIFIED METER AND A/C AMP. M64, M65
CAN-H
CAN-L
8P/R
56
72
28
G/B
E108
58G
M15
GR
LG/B
D
TO AV-AV-24
LG
L
P
TO LAN-CAN
TO DI-METER
G
3
IGN
4
CAN-H
5
CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
39
CAN-H
40
CAN-L
BCM (BODY CONTROL MODULE) M1
52
CAN-H
53
CAN-L
38
SPEED
AV CONTROL UNIT M78
PKB
36
V
TO DI-WARN
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
M16
M70
M47
W
M60
W
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M64
W
M65
W
H.S.
M78
W
E8
W
E110
W
TKWT6690E


AV-AV-17
AV CONTROL UNIT M78
AV COMM (H) 48
AV COMM (L) 49
AV COMM (H) 50
AV COMM (L) 51
: DATA LINE
W
R
BR
B/R
B
9
10
MULTIFUNCTION SWITCH M69
16
4
iPod ADAPTER M85
49P
B66
B418
50P
11
12
20
19
CAMERA CONTROL UNIT B481
78M
M13
B2
79M
P
L
B405
B402
18
17
2
B44
B502
1
5
4
21
B437
B67
B131
B40
B5
37
35
38
36
BOSE AMP. B107
M69 W
M78 W
REFER TO THE FOLLOWING.
B2 , B418 - SUPER MULTIPLE JUNCTION (SMJ)
M85 W
B44 GR
B107 W
B437 BR
B481 W
TKWT6691E

AV-AV-18

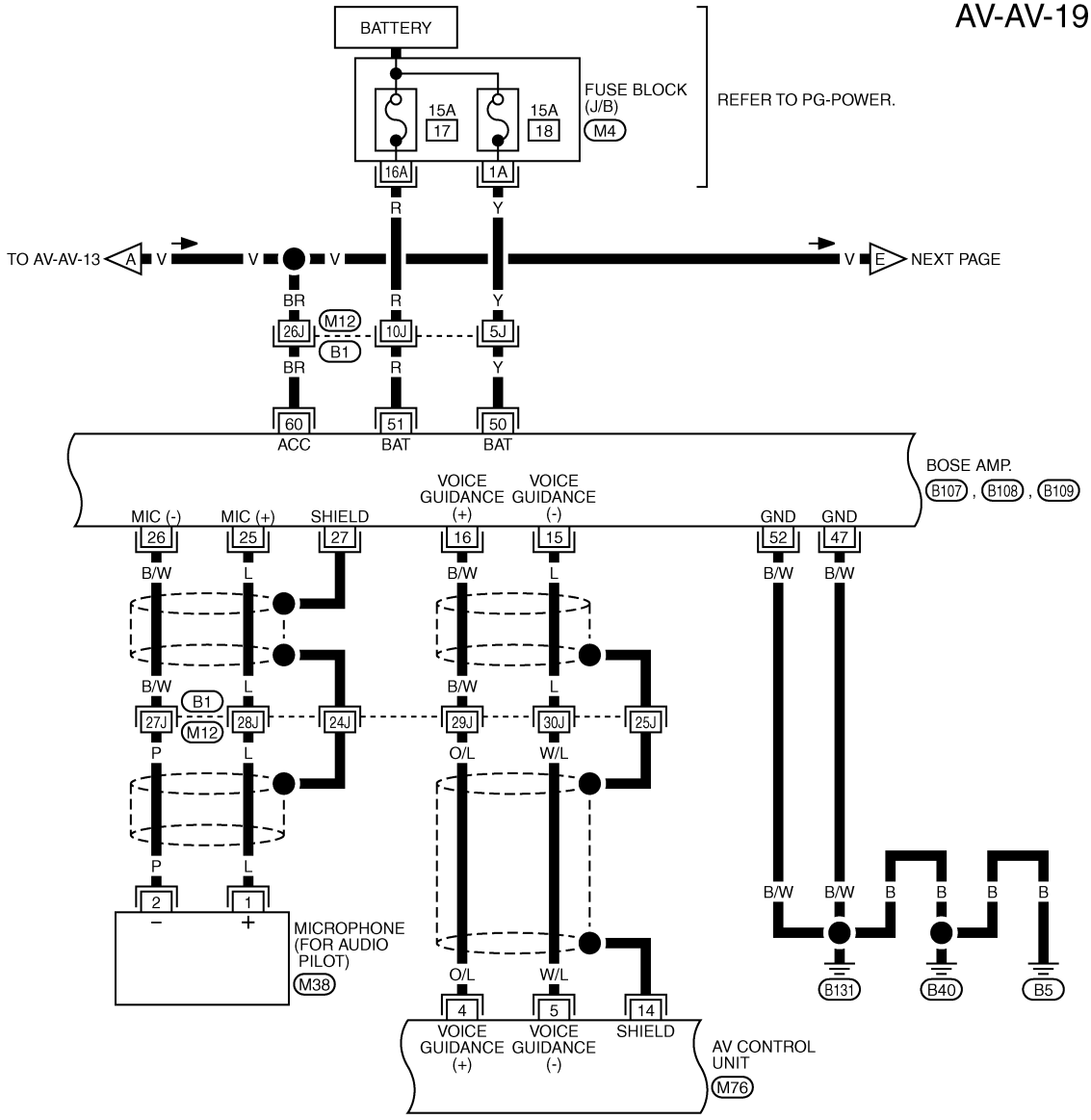


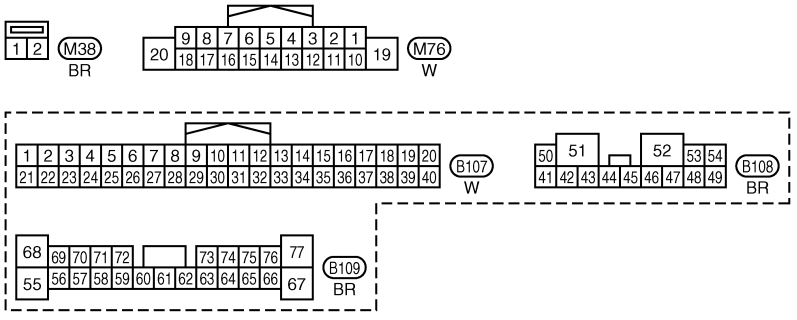


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6692E

AV-AV-19





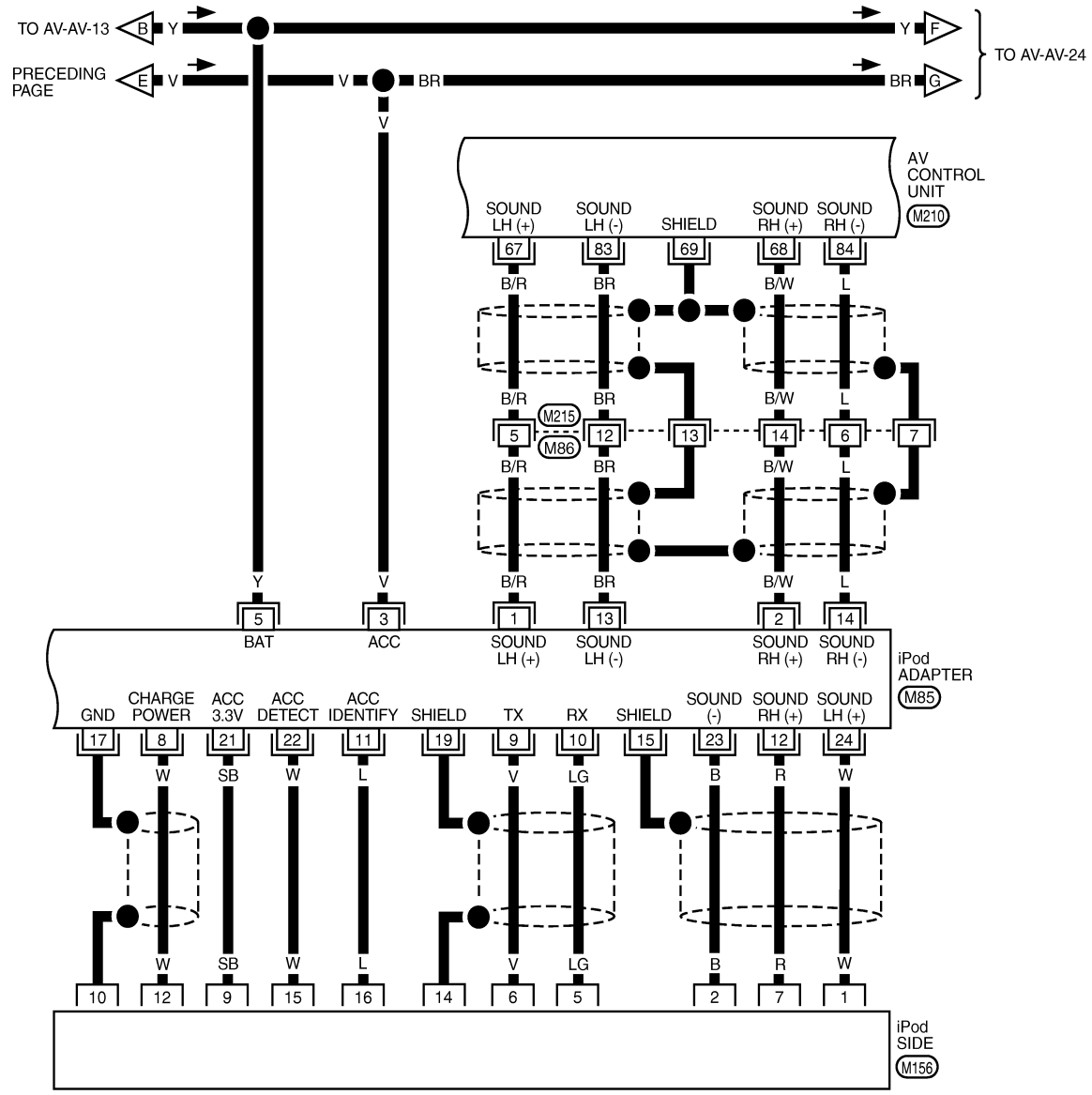
REFER TO THE FOLLOWING.

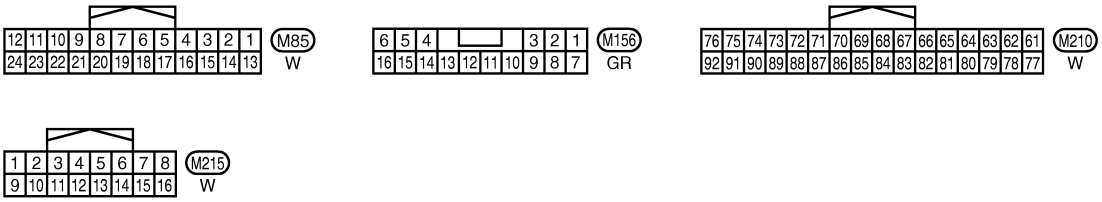
B1 -SUPER MULTIPLE JUNCTION (SMJ)

M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8276E

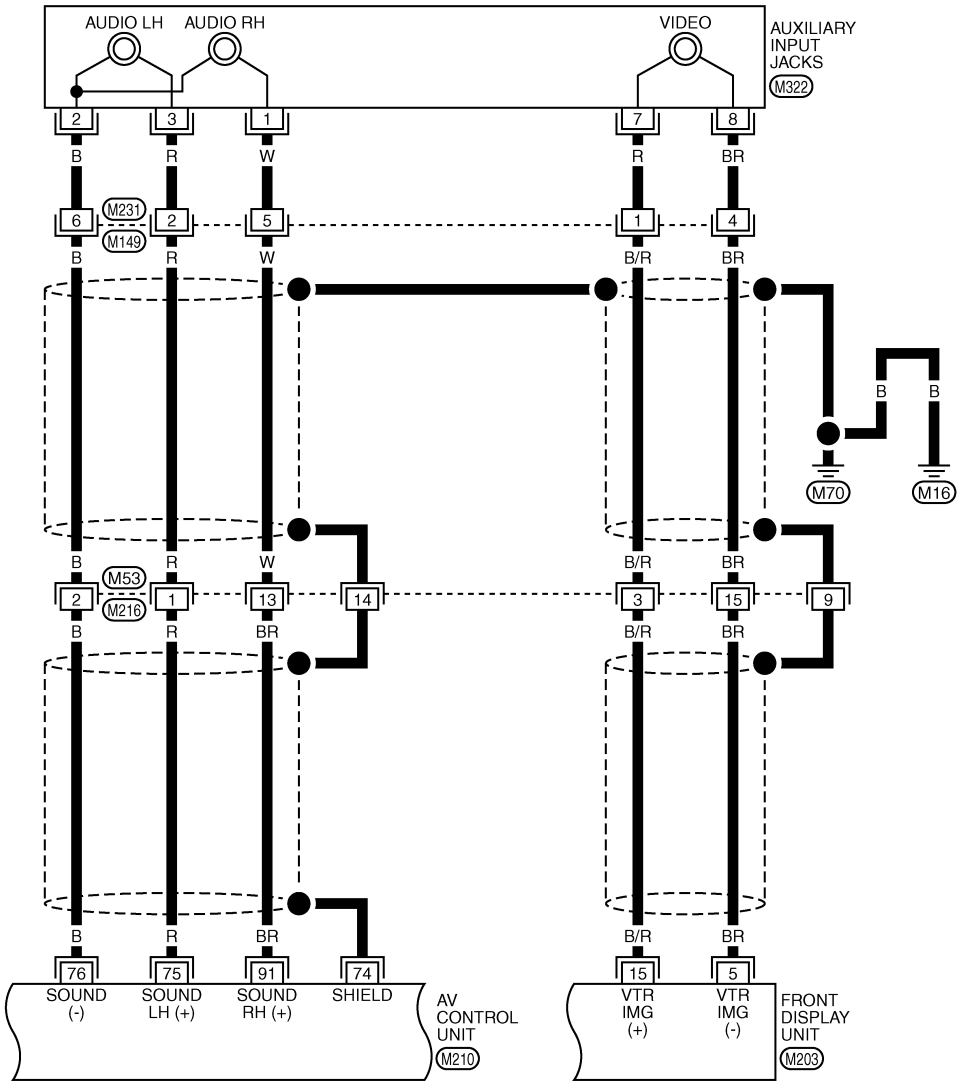
AV-AV-20

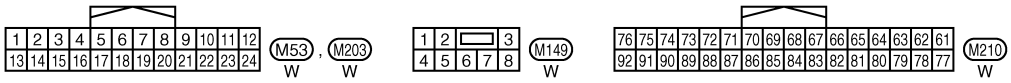


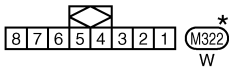


TKWT6695E

AV-AV-21



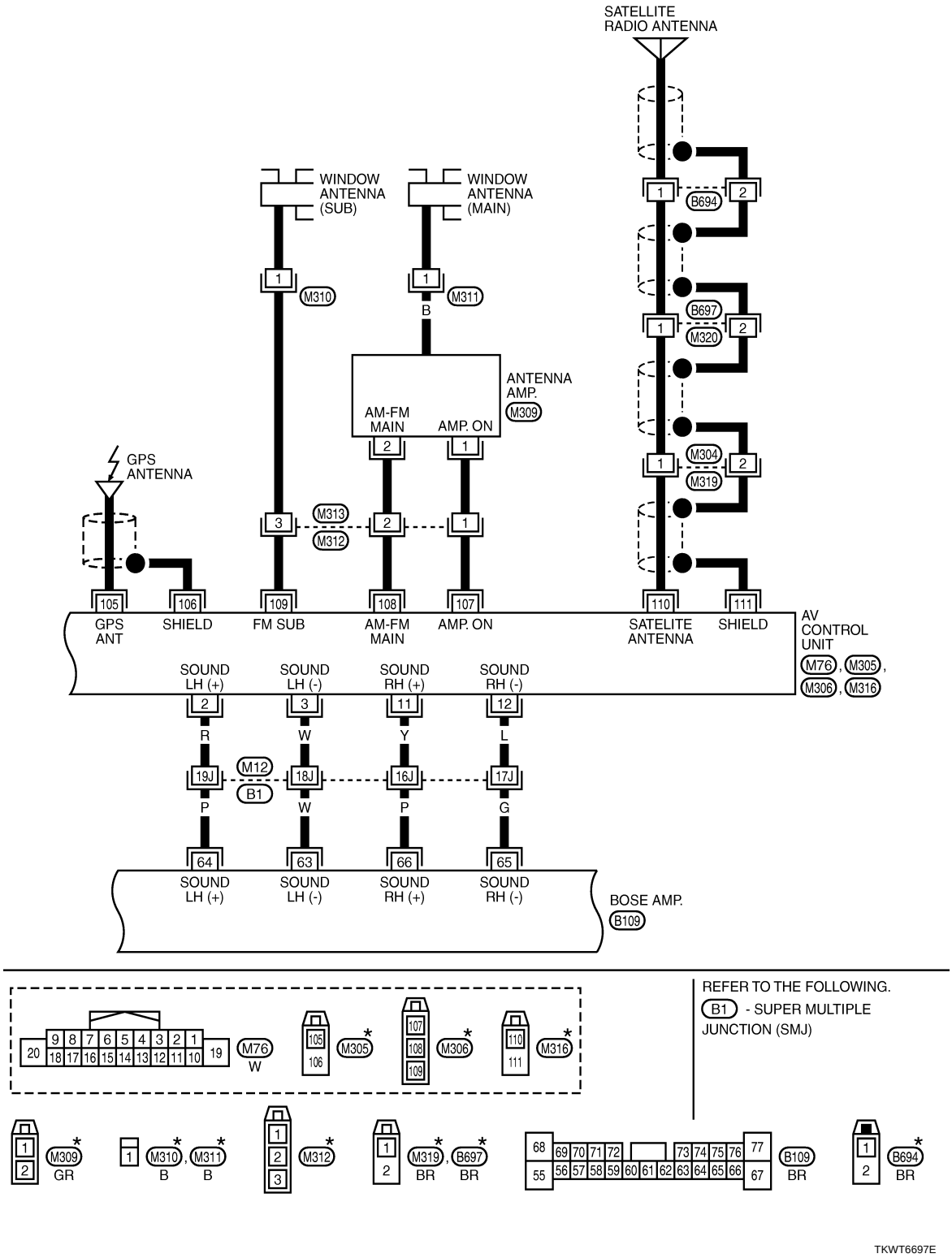




*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

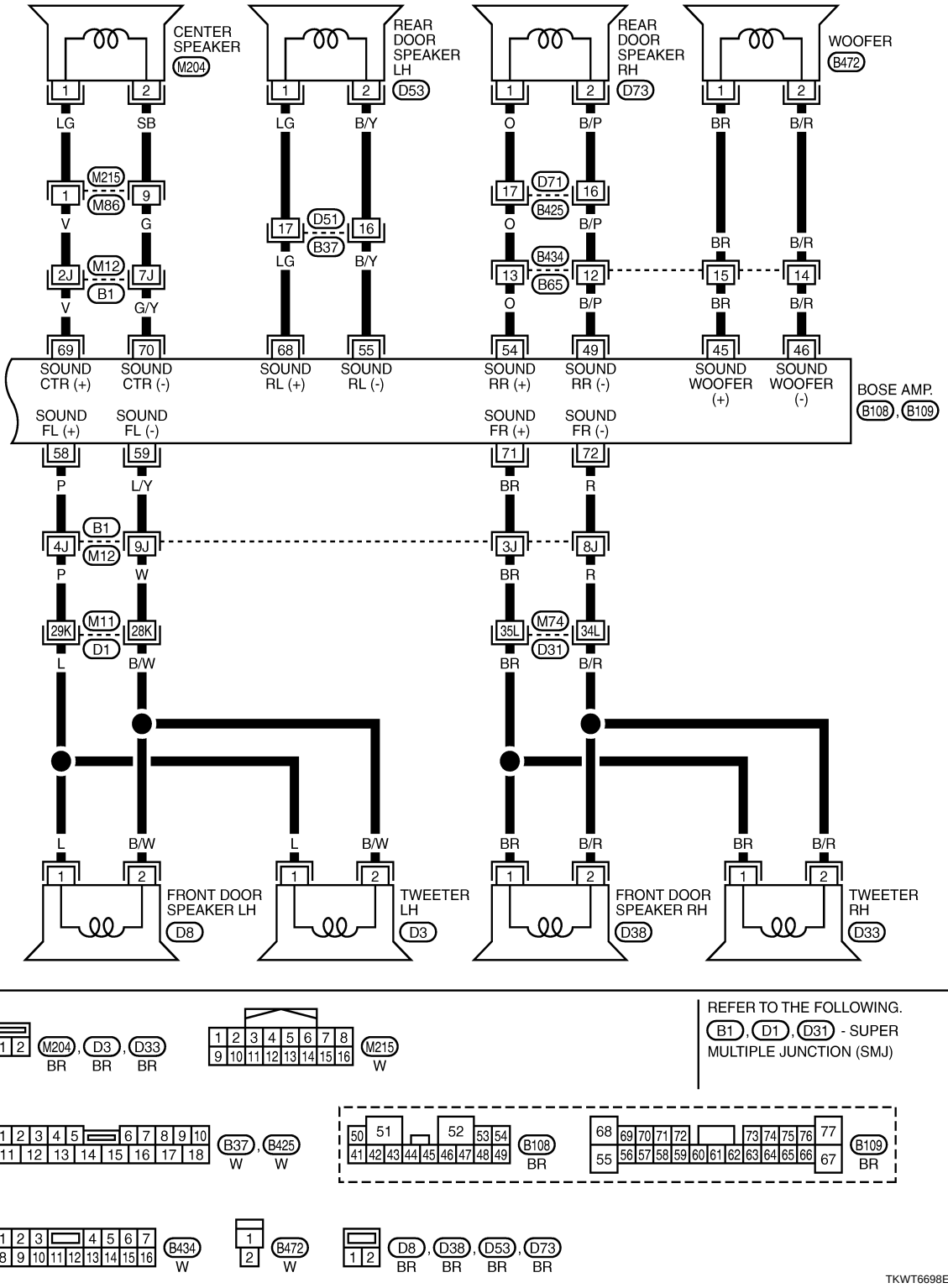
TKWT8277E

AV-AV-22

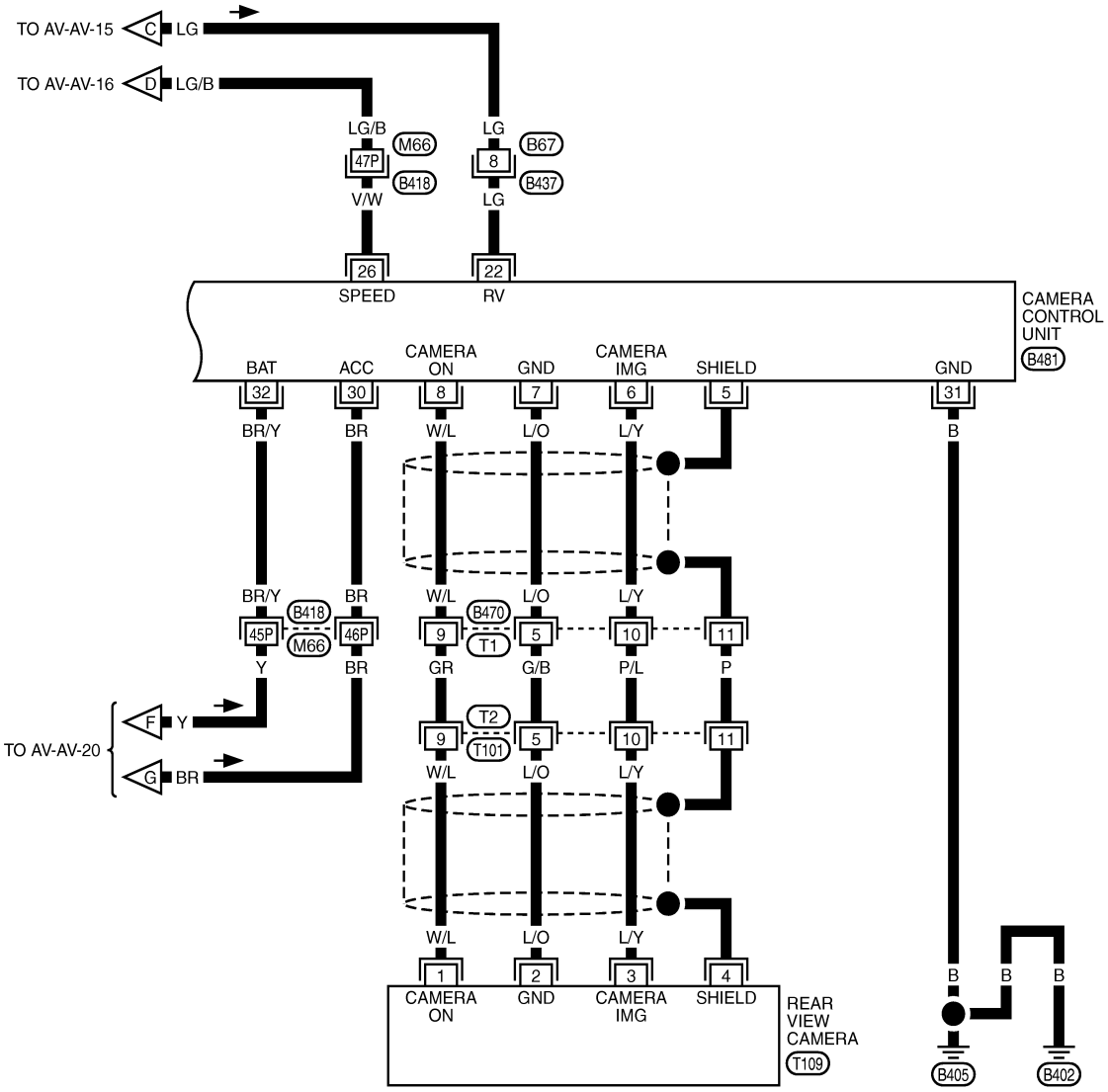


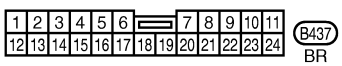
TKWT6697E

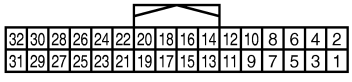
AV-AV-23

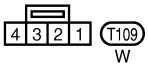

CENTER SPEAKER M204
REAR DOOR SPEAKER LH D53
REAR DOOR SPEAKER RH D73
WOOFER B472
LG SB LG B/Y O B/P BR B/R
M215 M86 D51 B37 D71 B425 B434 B65 M12 B1
V G LG B/Y O B/P BR B/R
2J 7J 13 12 15 14
V G/Y O B/P BR B/R
69 70 68 55 54 49 45 46
SOUND CTR (+) SOUND CTR (-) SOUND RL (+) SOUND RL (-) SOUND RR (+) SOUND RR (-) SOUND WOOFER (+) SOUND WOOFER (-)
BOSE AMP. B108, B109
SOUND FL (+) SOUND FL (-) SOUND FR (+) SOUND FR (-)
58 59 71 72
P L/Y BR R
B1 M12 4J 9J 3J 8J
P W BR R
M11 D1 29K 28K M74 D31 35L 34L
L B/W BR B/R
L B/W L B/W BR B/R BR B/R
FRONT DOOR SPEAKER LH D8
TWEETER LH D3
FRONT DOOR SPEAKER RH D38
TWEETER RH D33
M204, D3, D33 BR BR BR
M215 W
REFER TO THE FOLLOWING.
B1, D1, D31 - SUPER MULTIPLE JUNCTION (SMJ)
B37, B425 W W
B108 BR
B109 BR
B434 W
B472 W
D8, D38, D53, D73 BR BR BR BR
TKWT6698E

AV-AV-24







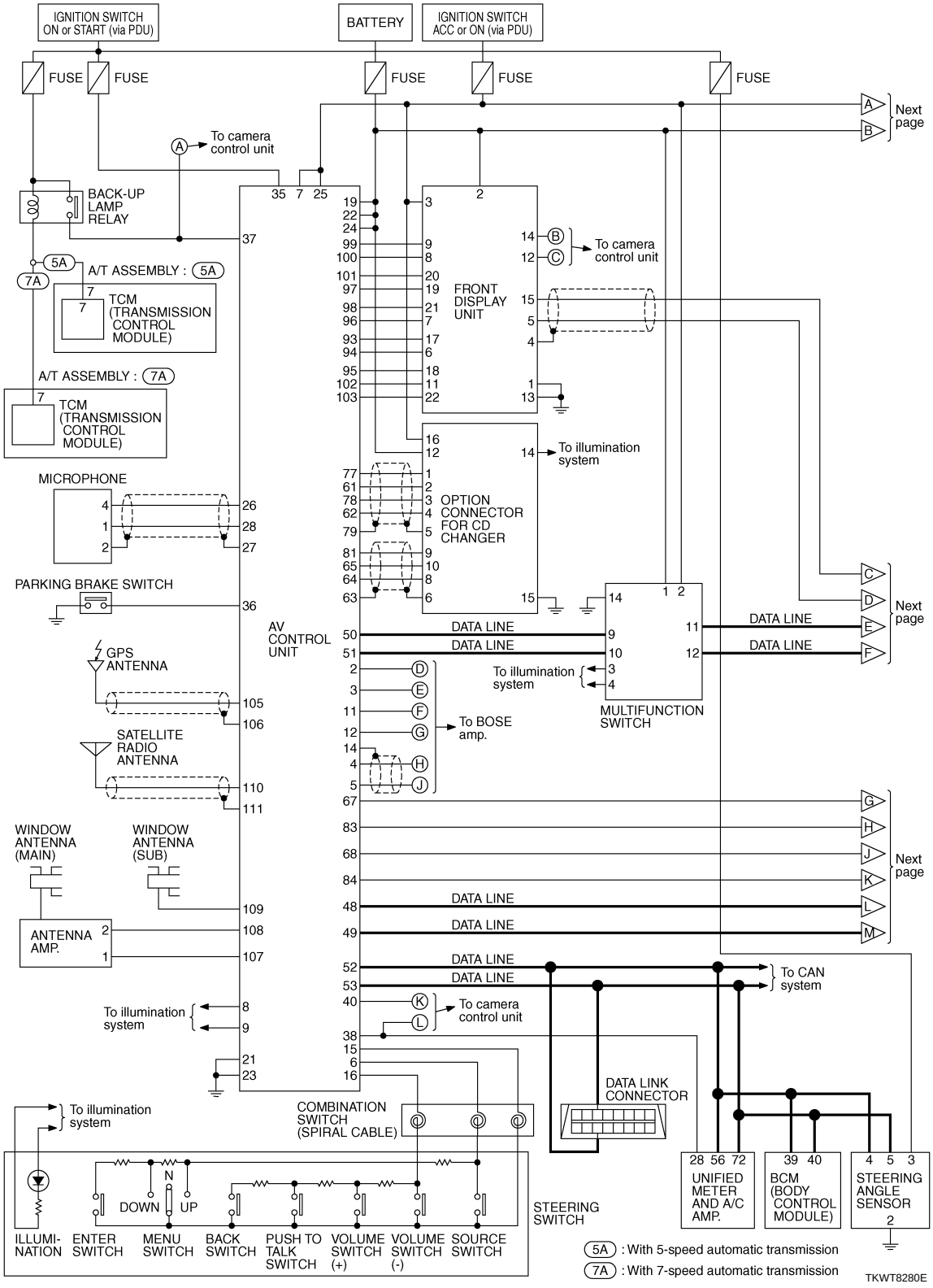


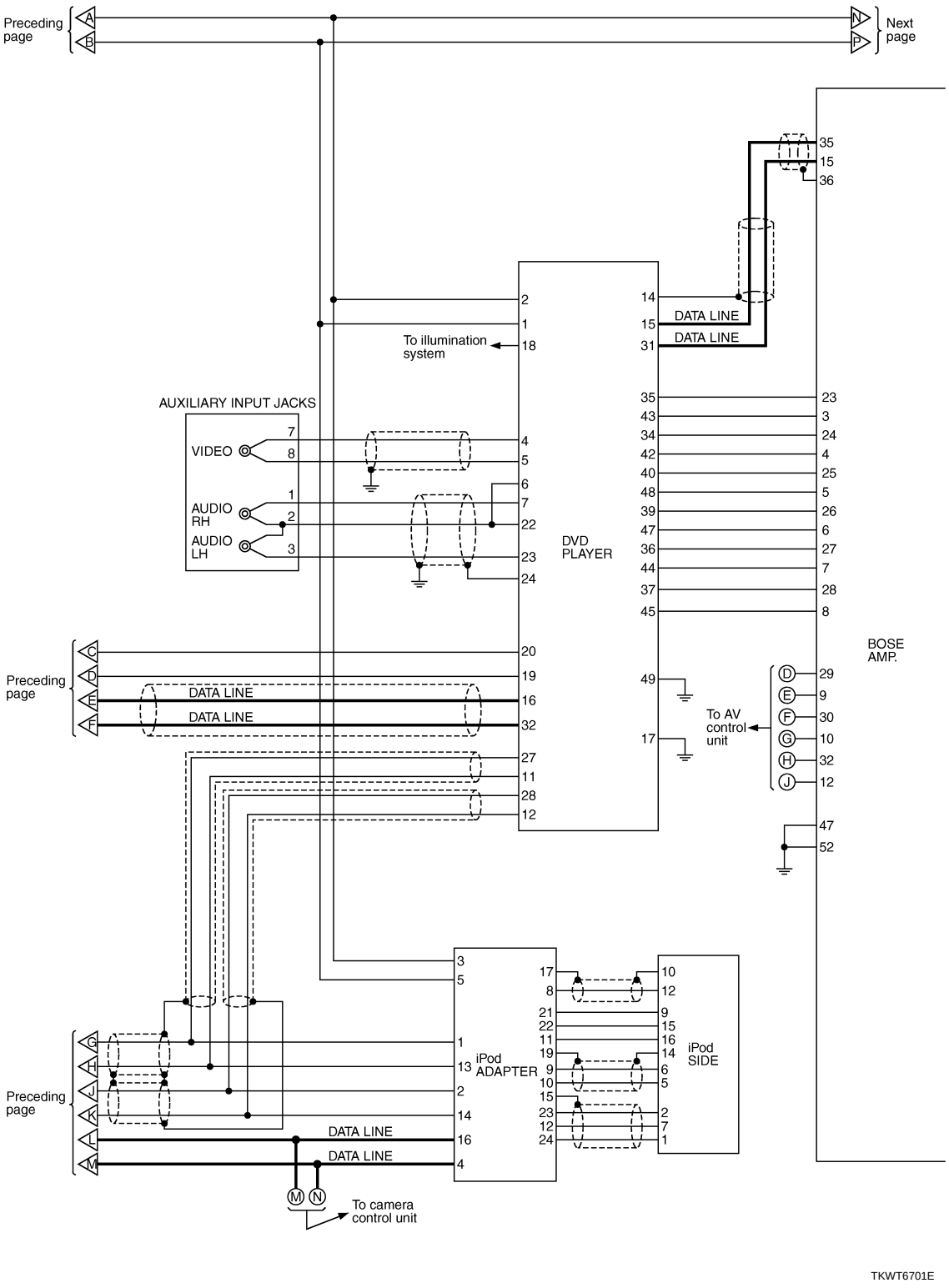
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

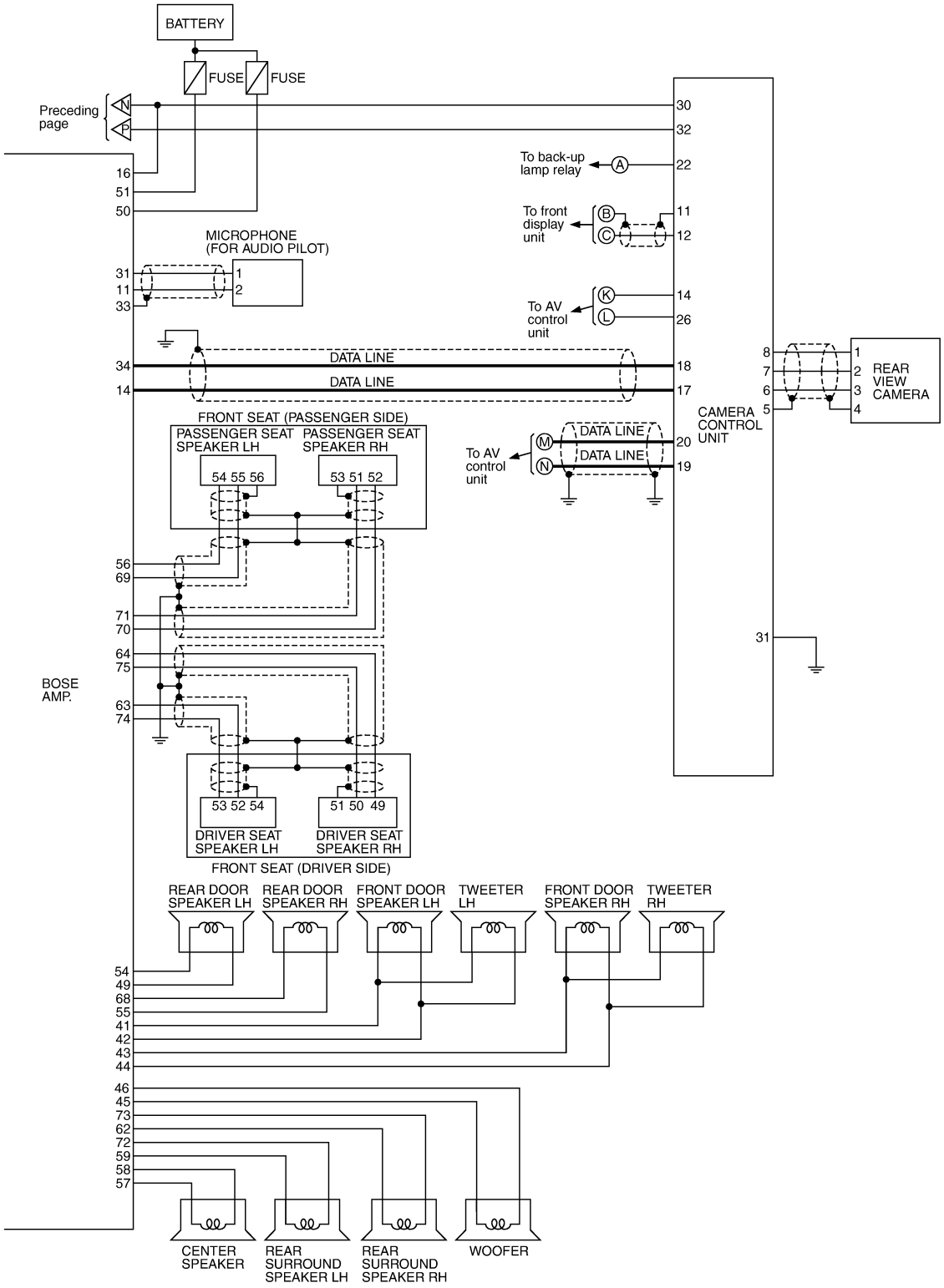
TKWT6699E

Schematic - BOSE Surround Audio 5.1ch System -

INFOID:0000000004380470




Preceding page
A
B
Next page
N
P
AUXILIARY INPUT JACKS
VIDEO
AUDIO RH
AUDIO LH
7
8
1
2
3
4
5
6
7
22
23
24
To illumination system
18
2
1
DVD PLAYER
14
15
31
DATA LINE
DATA LINE
35
15
36
35
43
34
42
40
48
39
47
36
44
37
45
23
3
24
4
25
5
26
6
27
7
28
8
BOSE AMP.
49
17
To AV control unit
D
E
F
G
H
J
29
9
30
10
32
12
47
52
Preceding page
C
D
E
F
DATA LINE
DATA LINE
20
19
16
32
27
11
28
12
3
5
1
13
2
14
16
4
iPod ADAPTER
17
8
21
22
11
19
9
10
15
23
12
24
iPod SIDE
10
12
9
15
16
14
6
5
2
7
1
Preceding page
G
H
J
K
L
M
DATA LINE
DATA LINE
M
N
To camera control unit
TKWT6701E



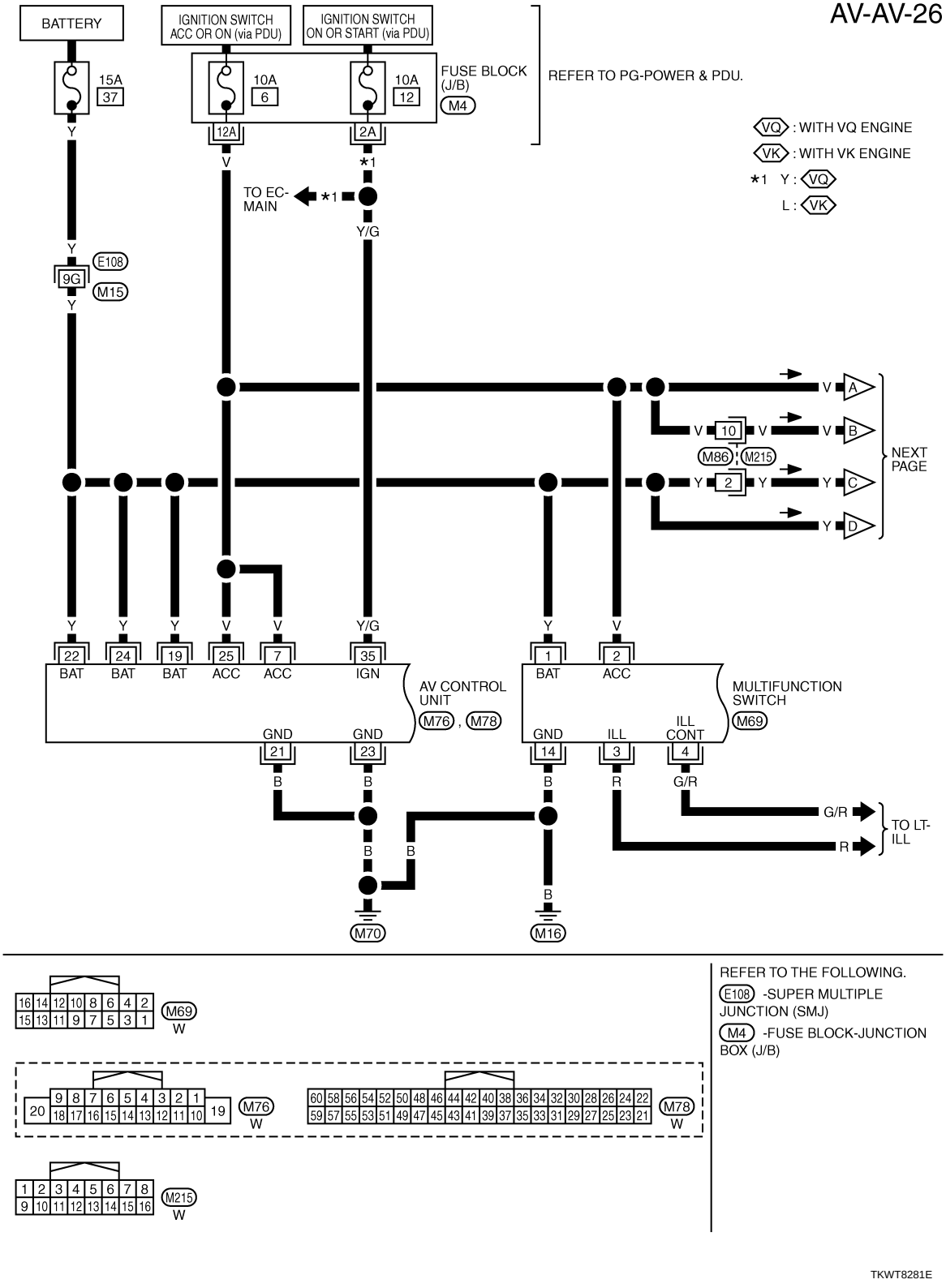
TKWT6702E

Wiring Diagram - AV - / BOSE Surround Audio 5.1ch System

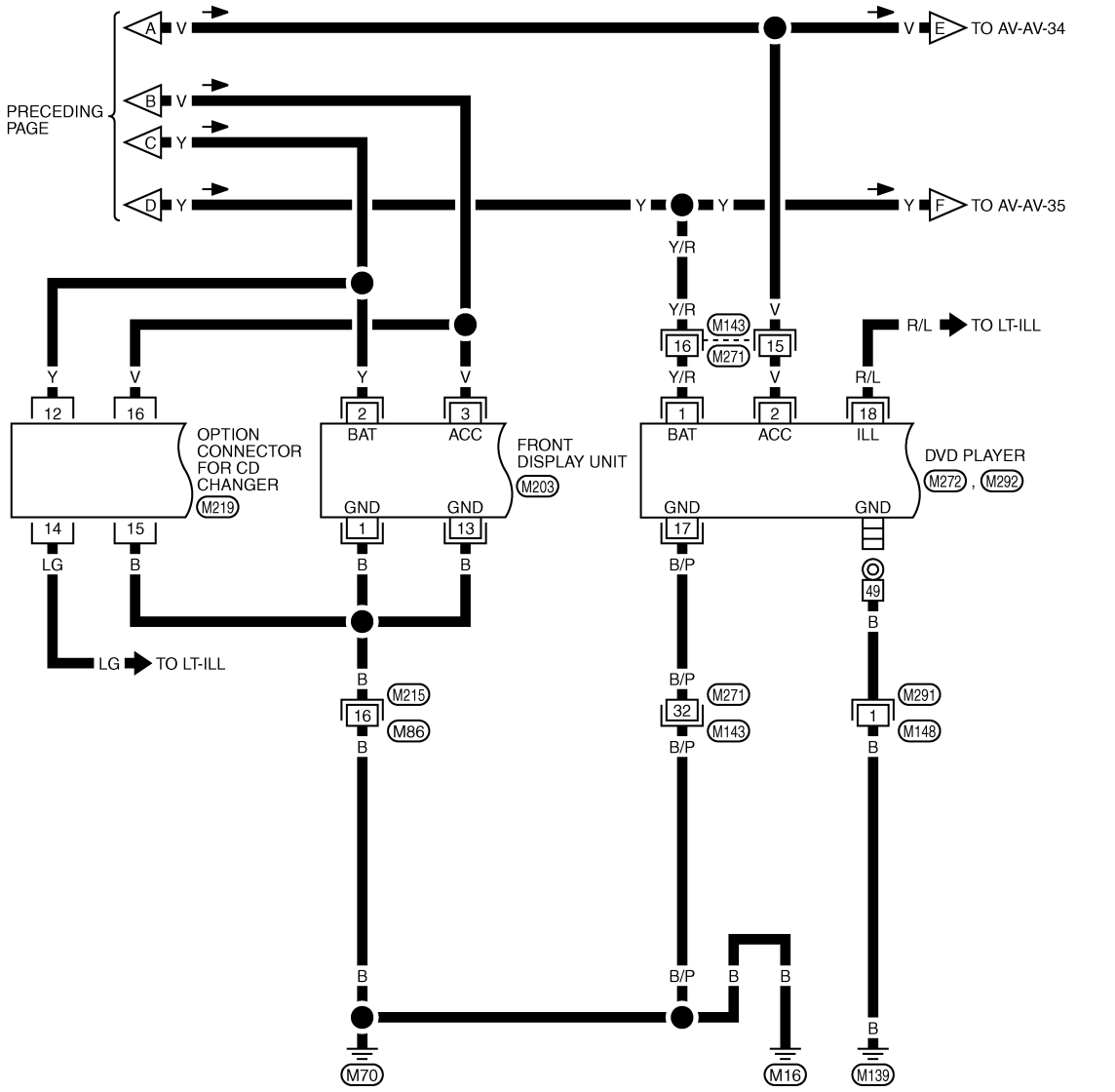
INFOID:0000000004380471

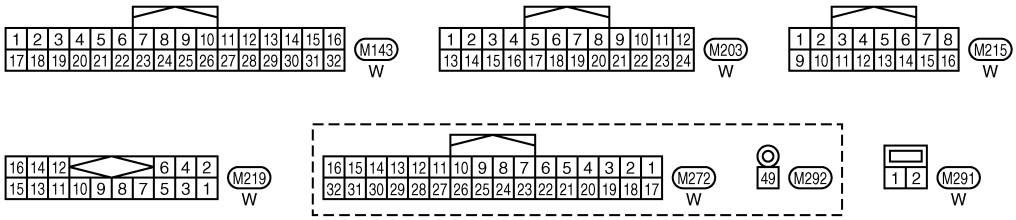
NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.



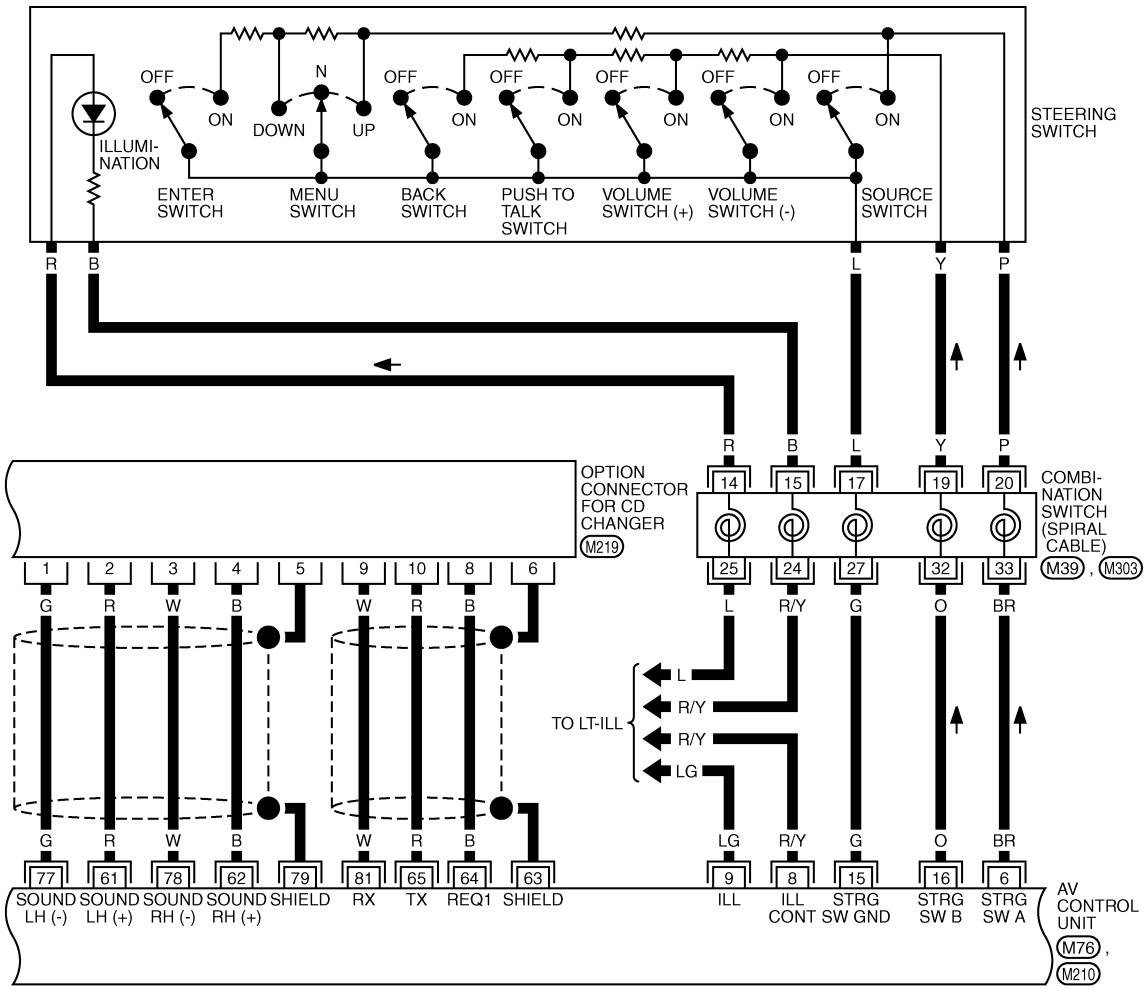
AV-AV-27

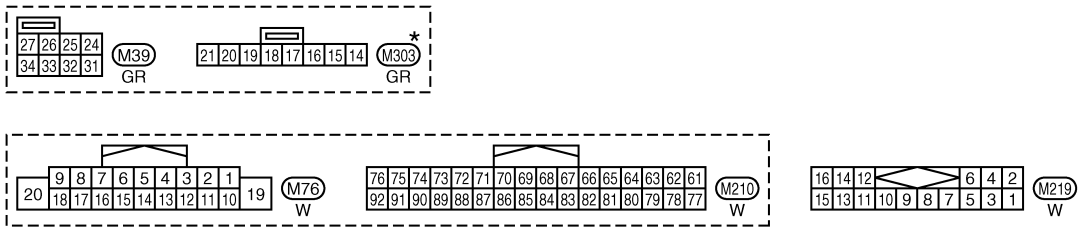




TKWT8282E

AV-AV-28

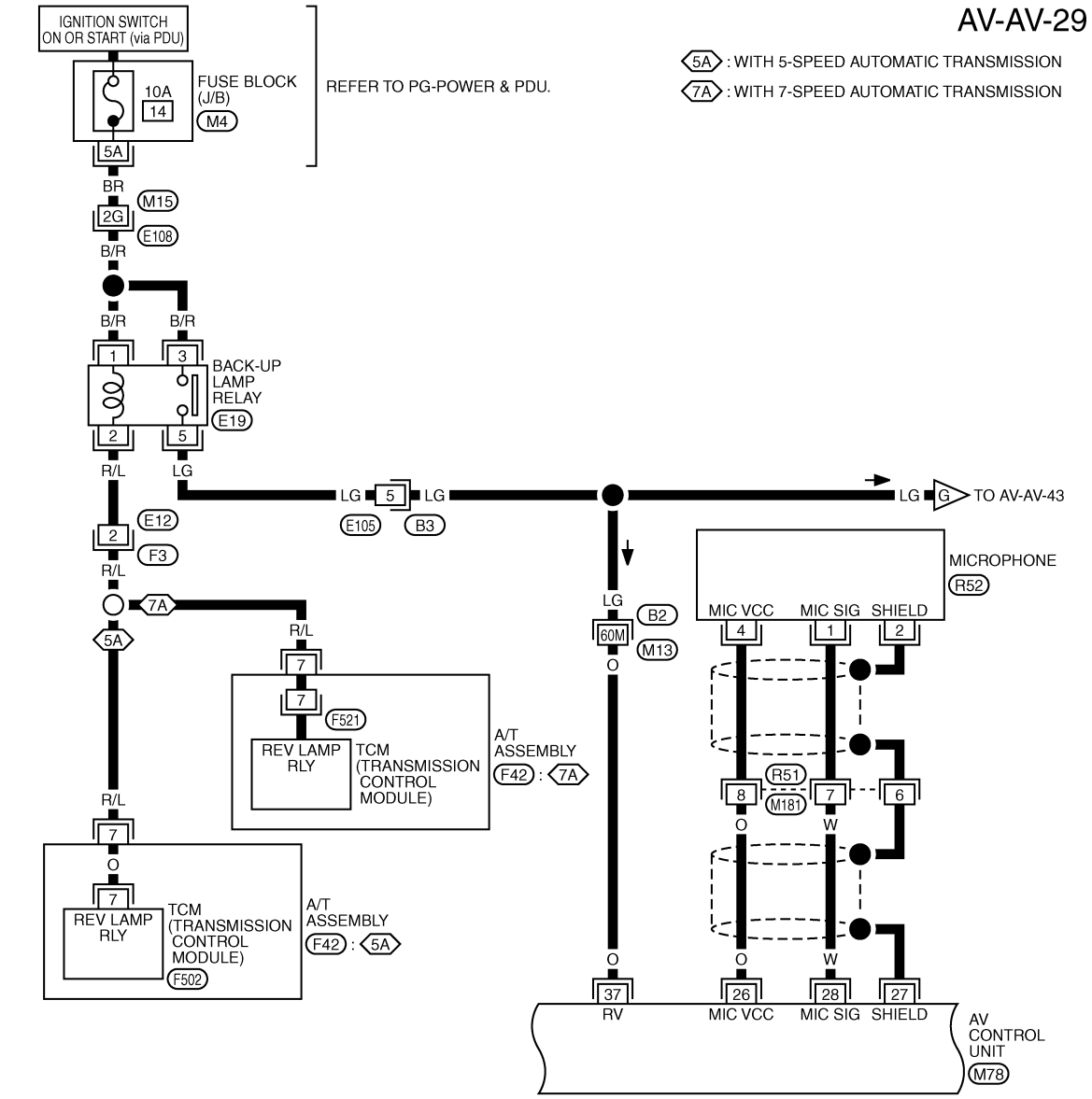


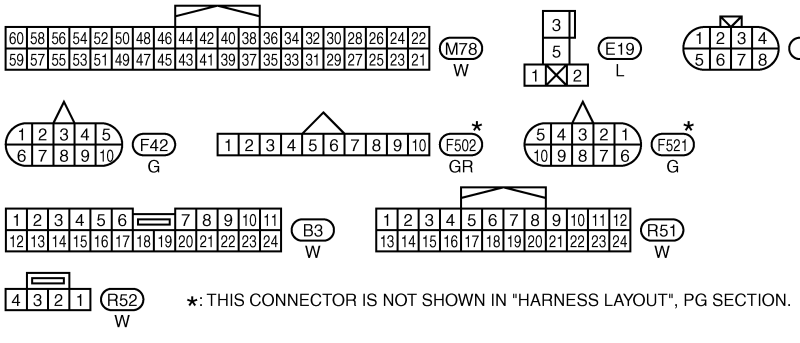


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8283E

AV-AV-29

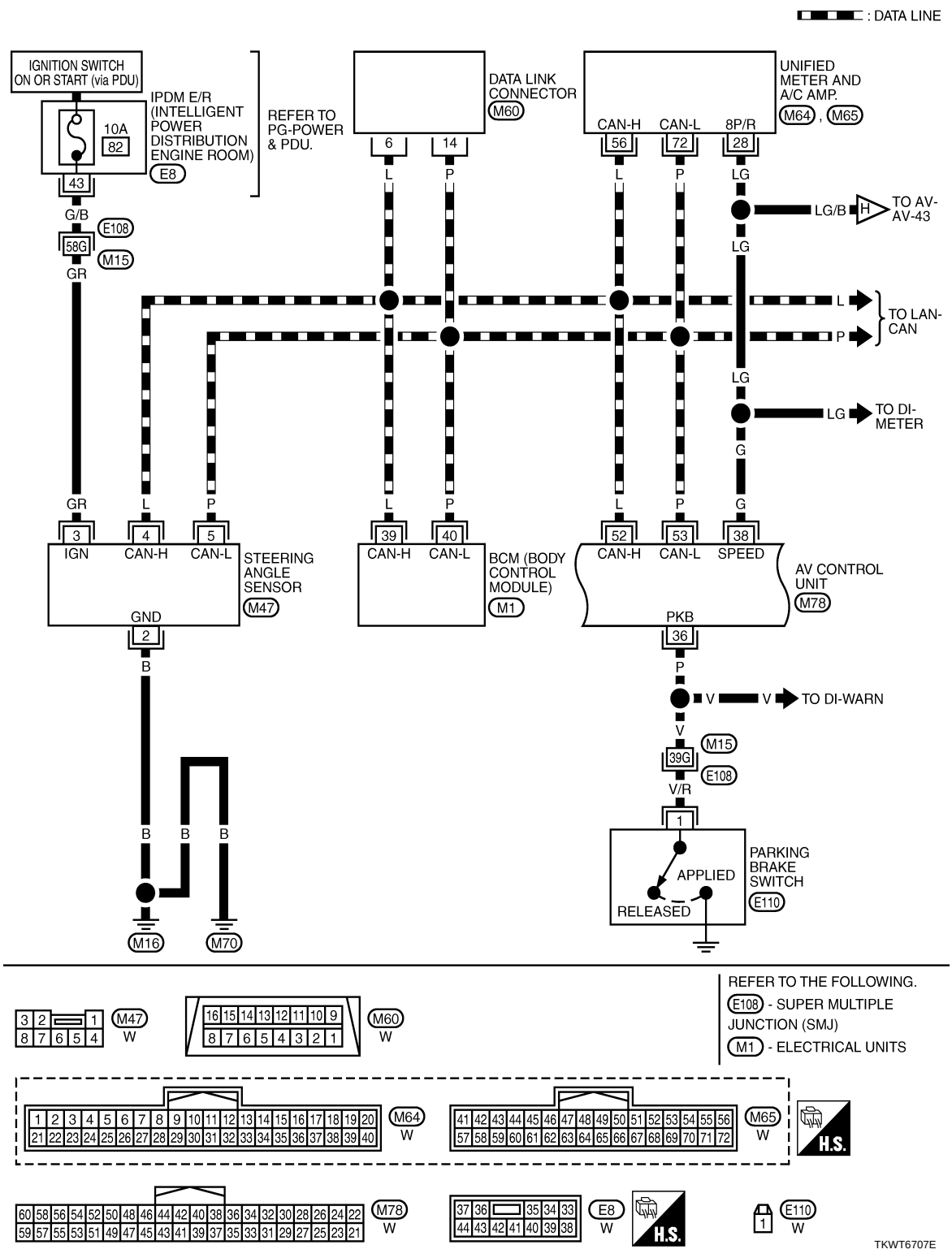




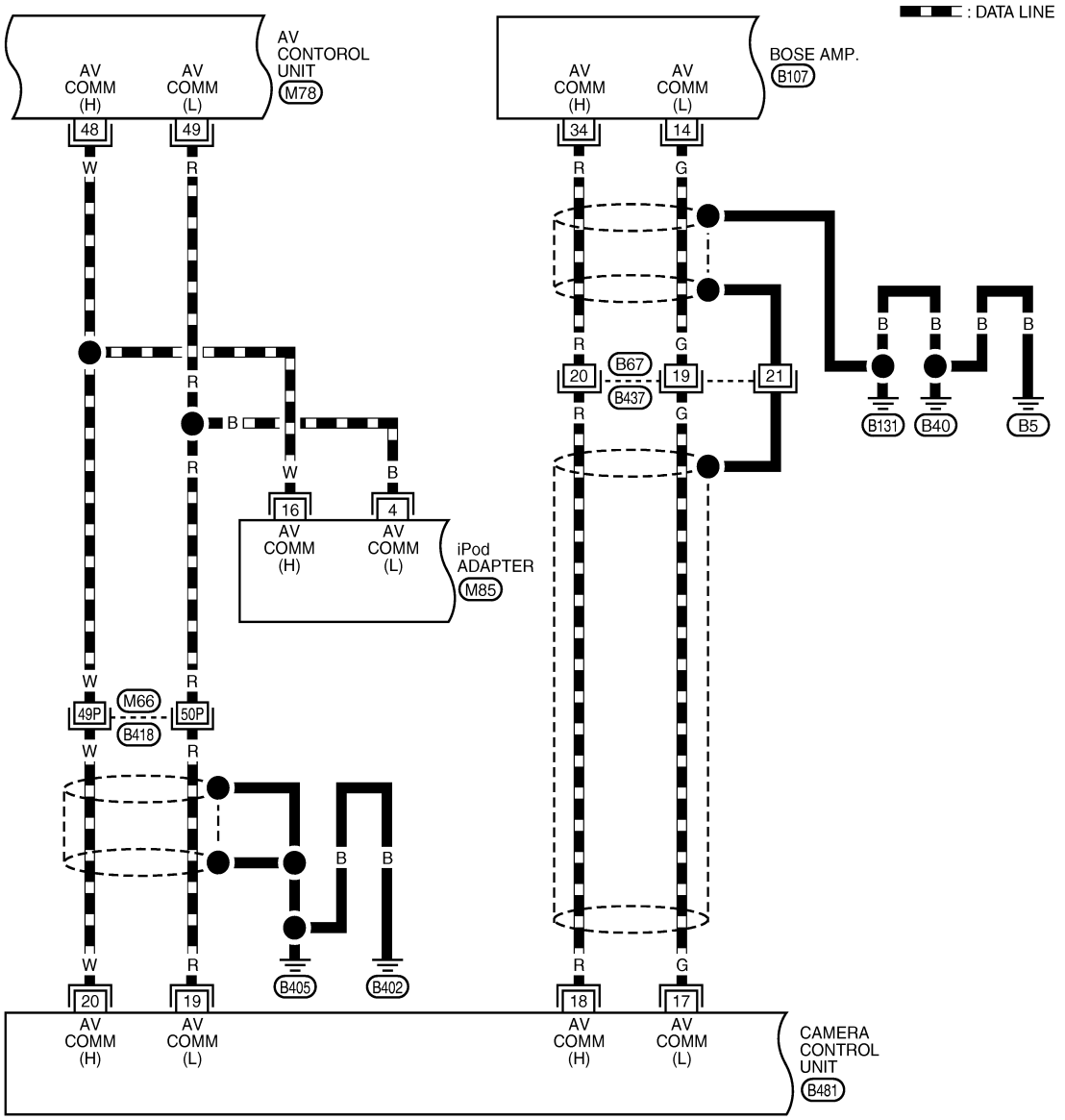
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

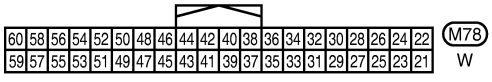
TKWT8284E

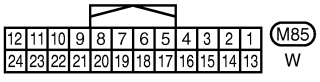
AV-AV-30

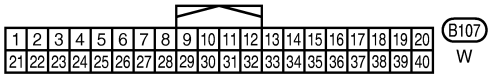

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
G/B
E108
58G
M15
GR
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
L
P
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56 72 28
L P LG
LG/B H TO AV-AV-43
LG
L
P
TO LAN-CAN
LG
LG TO DI-METER
G
GR L P L P L P G
3 4 5 39 40 52 53 38
IGN CAN-H CAN-L
STEERING ANGLE SENSOR M47
CAN-H CAN-L
BCM (BODY CONTROL MODULE) M1
CAN-H CAN-L SPEED
AV CONTROL UNIT M78
GND
2
PKB
36
B
P
V V TO DI-WARN
V
M15
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B B B
M16
M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47 W
M60 W
M64 W
M65 W
H.S.
M78 W
E8 W
E110 W
TKWT6707E

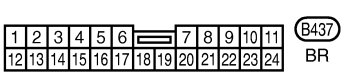
AV-AV-31

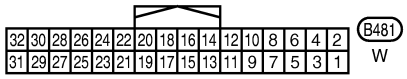








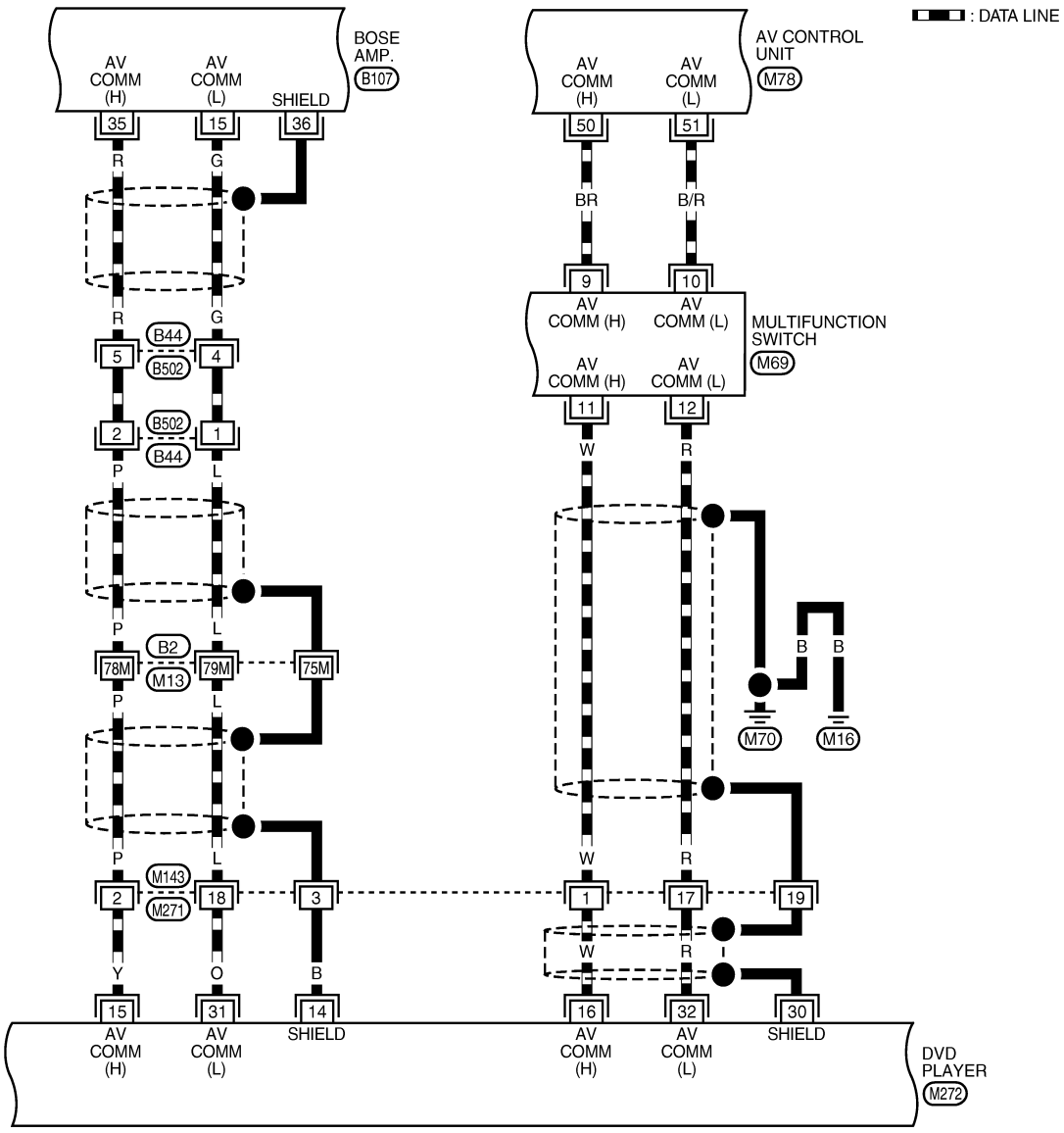


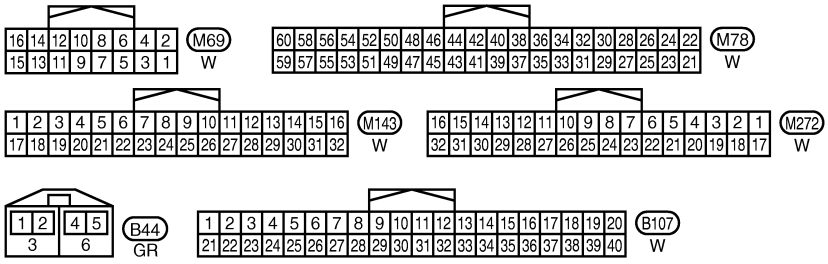


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6708E

AV-AV-32

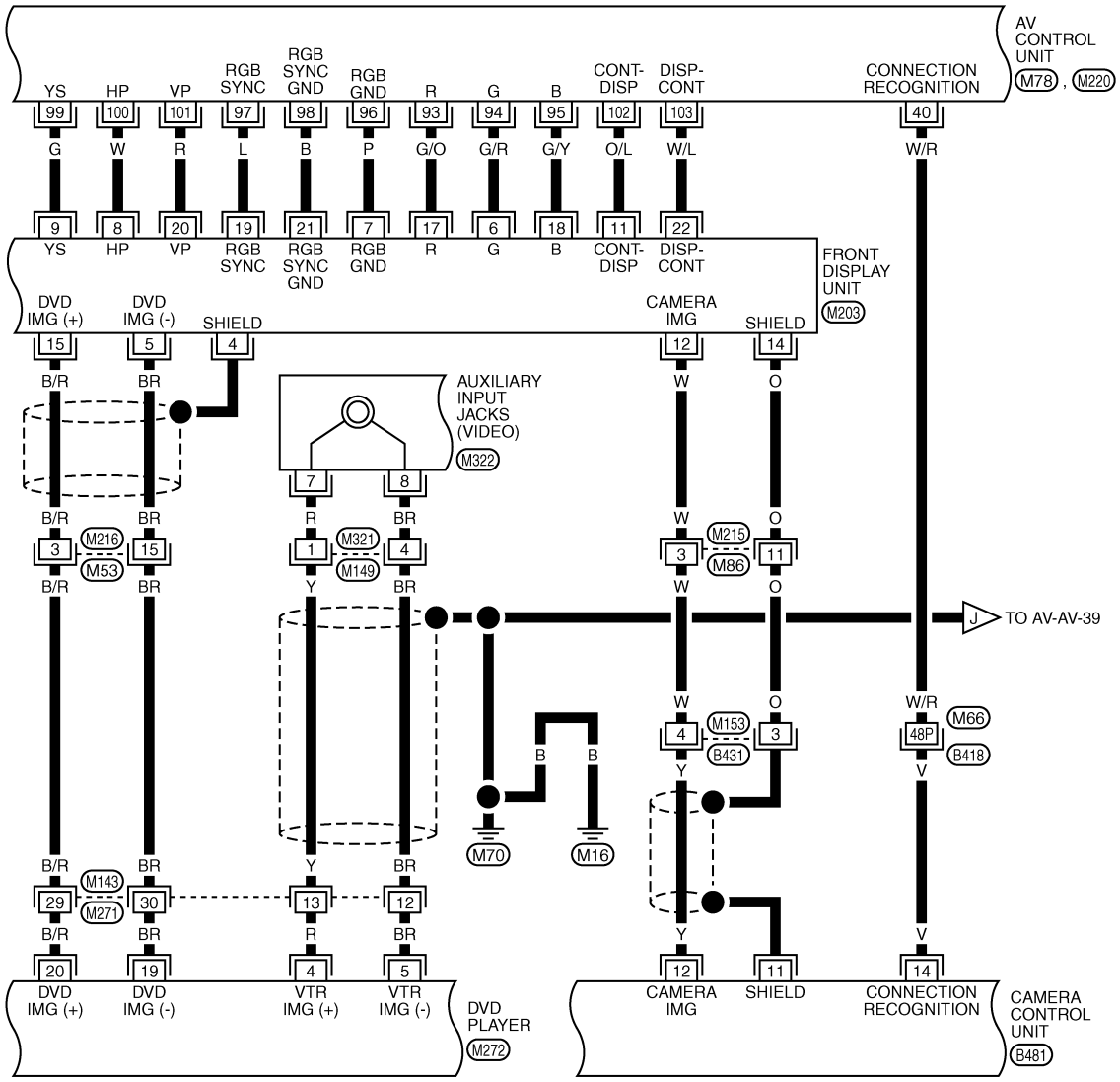


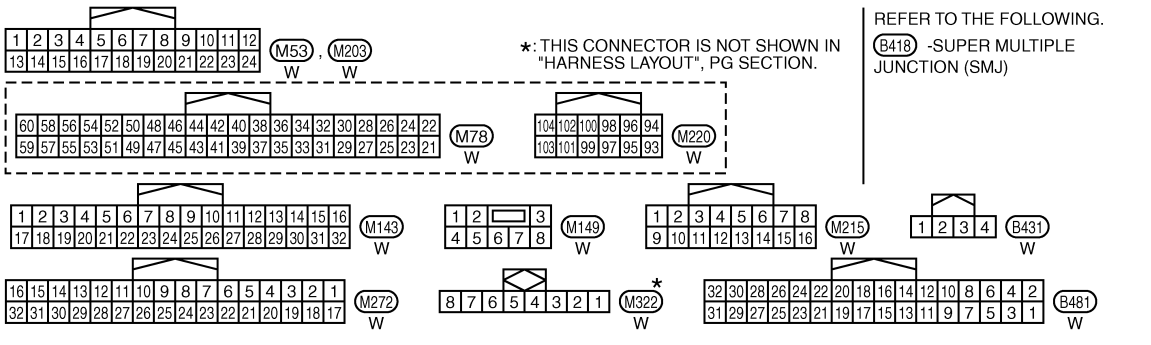


REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6709E

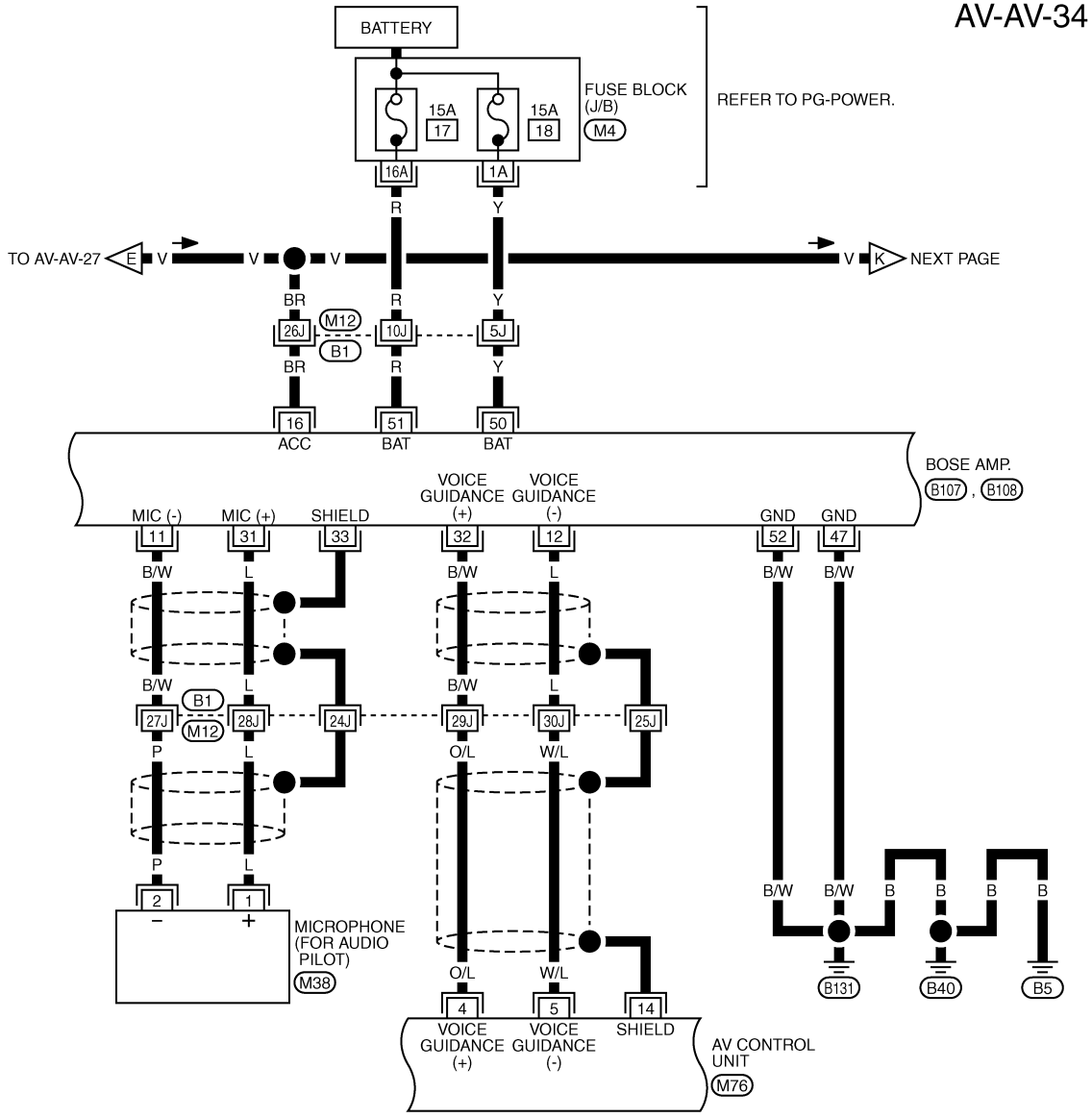
AV-AV-33

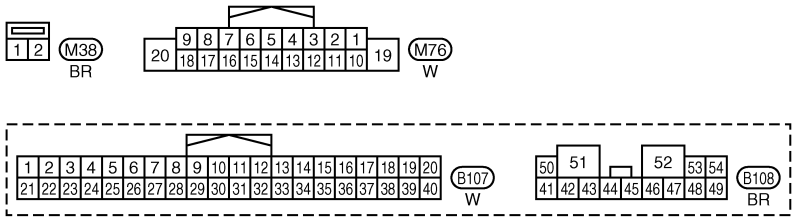




TKWT8285E

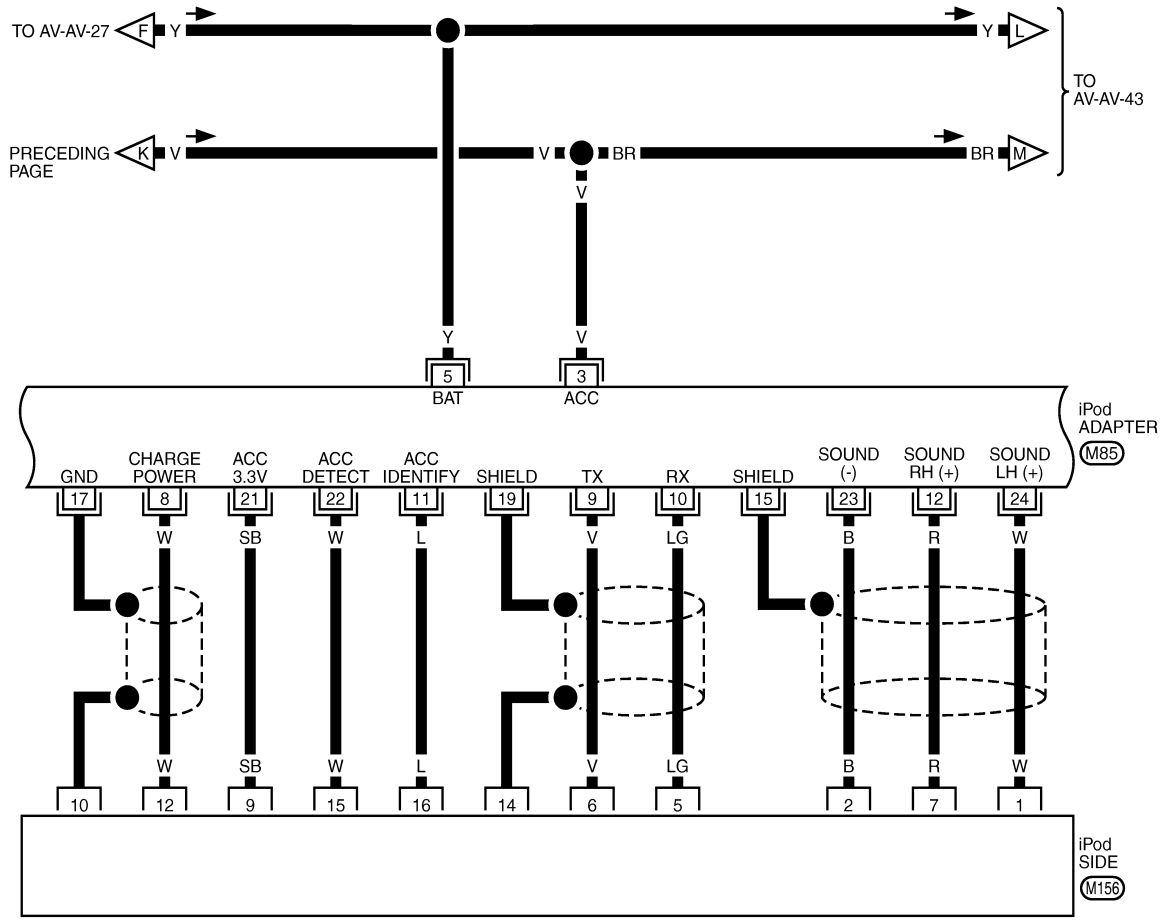
AV-AV-34

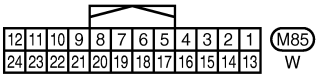


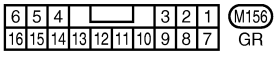


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8286E

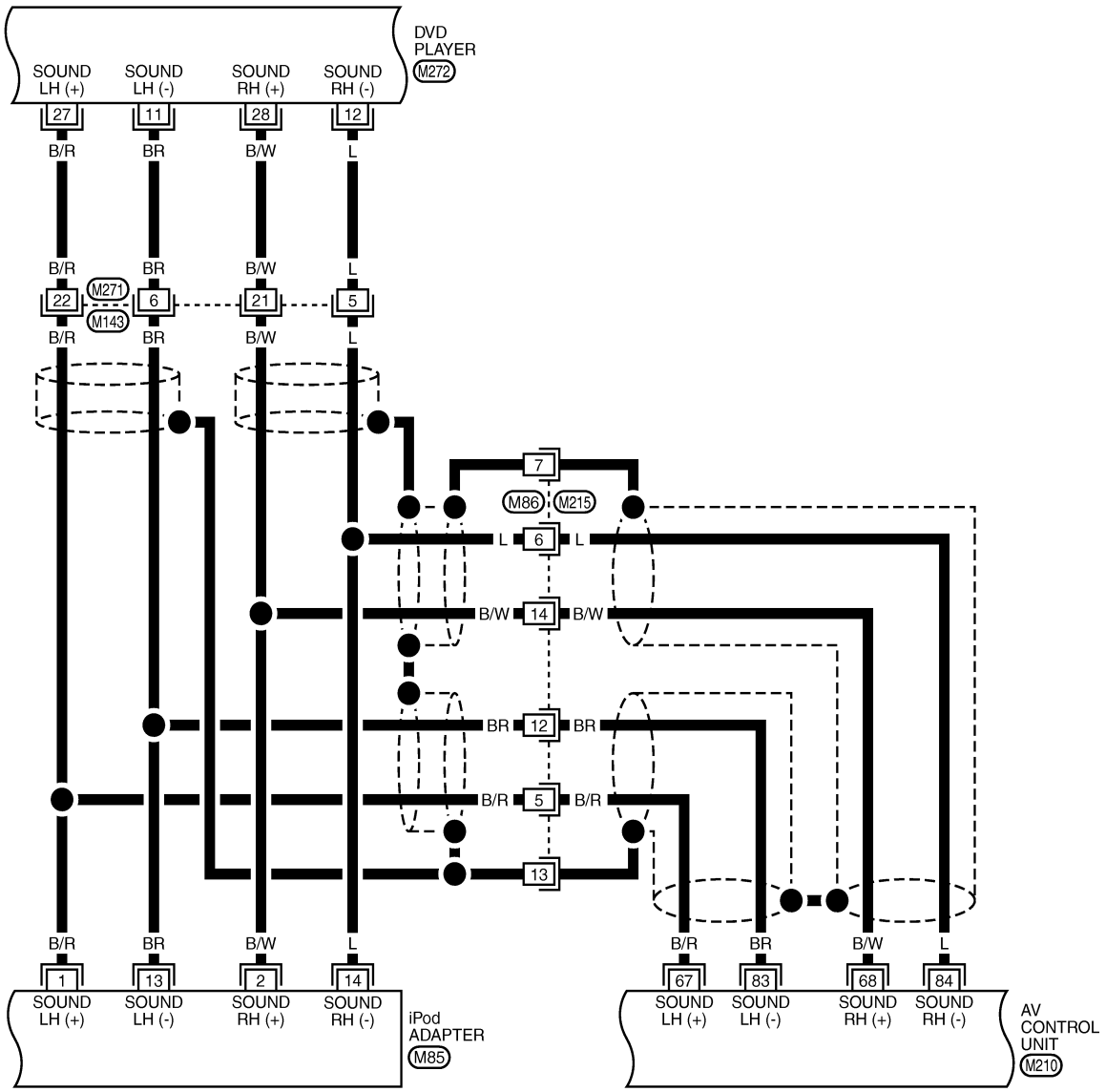

TO AV-AV-27
F
Y
Y
L
TO
AV-AV-43
PRECEDING
PAGE
K
V
V
BR
BR
M
V
Y
V
5
BAT
3
ACC
iPod
ADAPTER
M85
GND
CHARGE
POWER
ACC
3.3V
ACC
DETECT
ACC
IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND
(-)
SOUND
RH (+)
SOUND
LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod
SIDE
M156

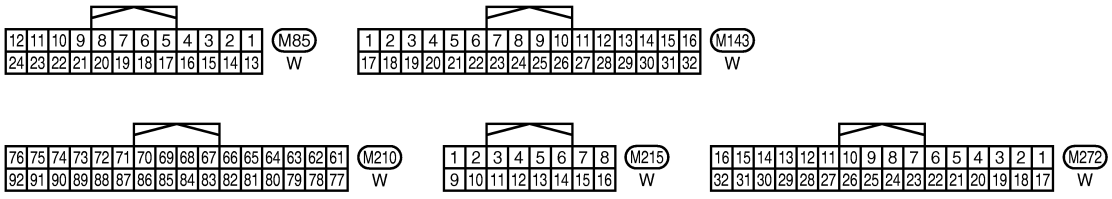

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6713E

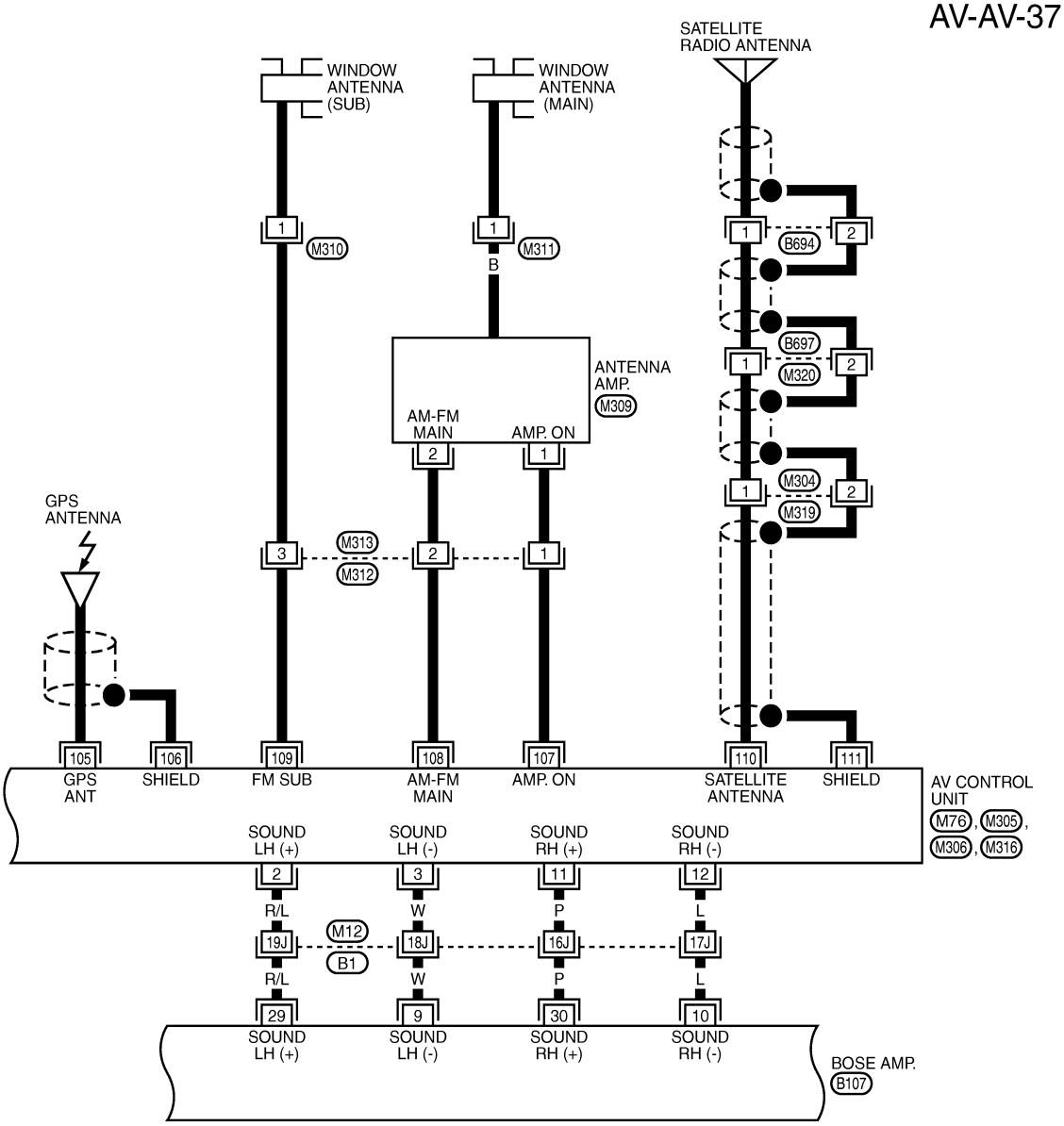
AV-AV-36

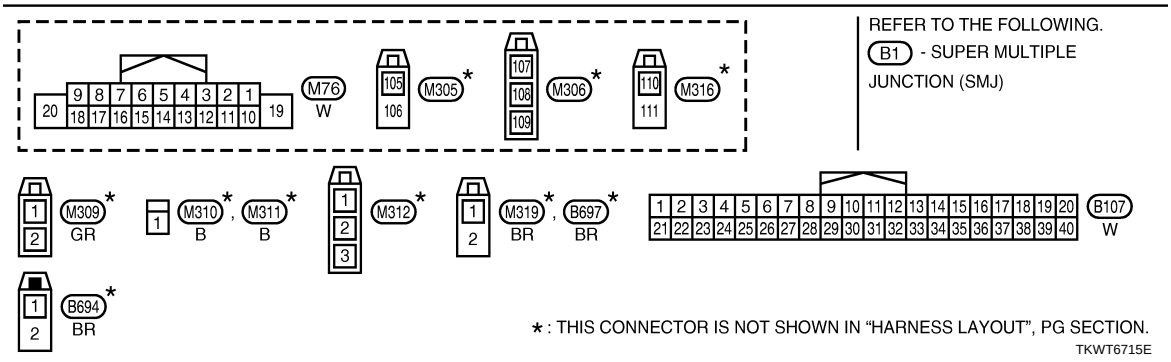




TKWT6714E

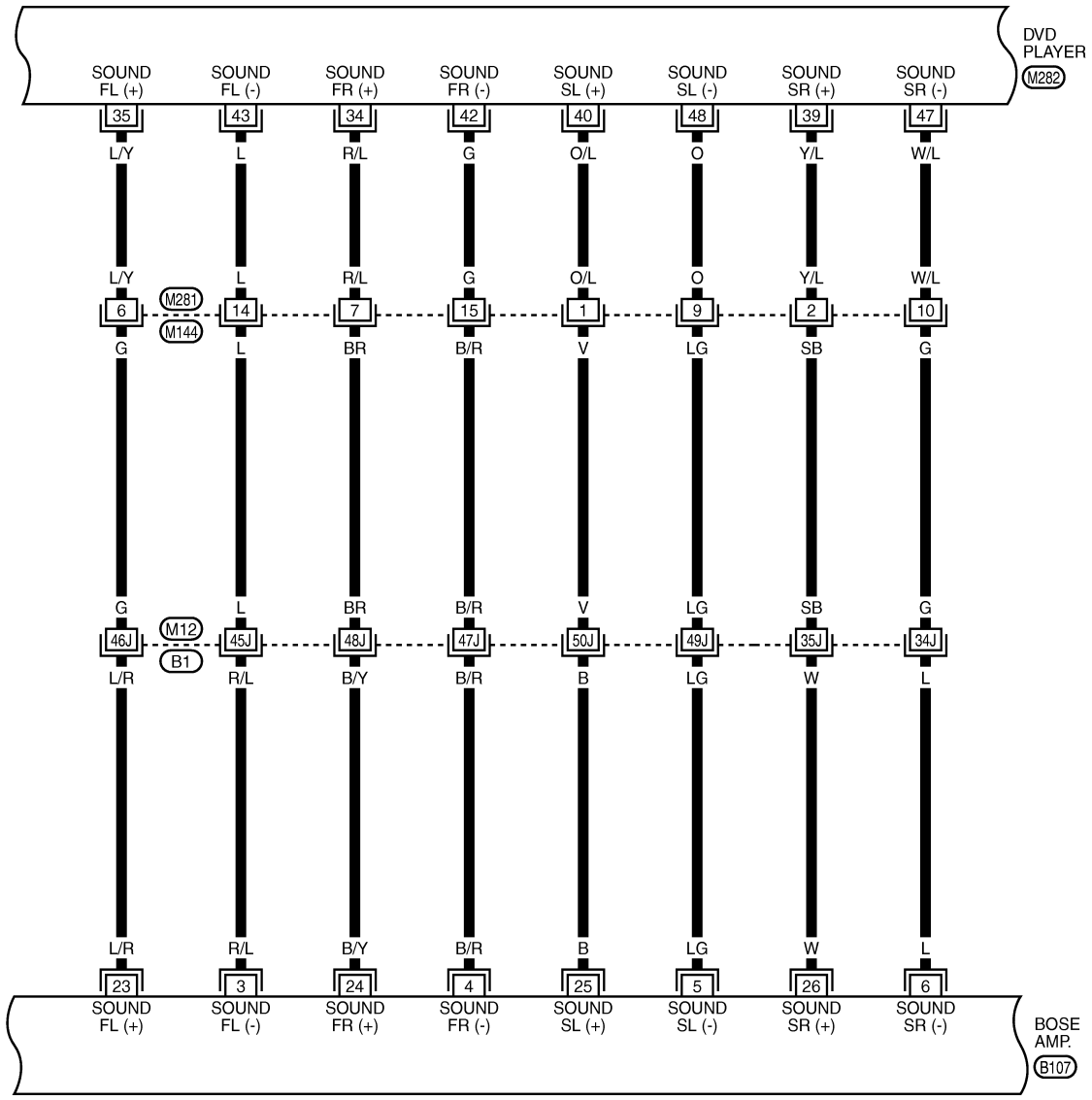
AV-AV-37

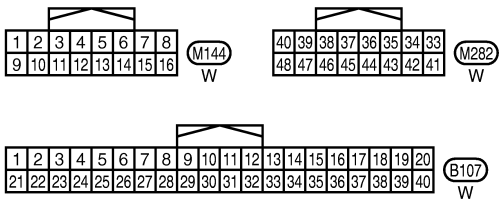




TKWT6715E

AV-AV-38

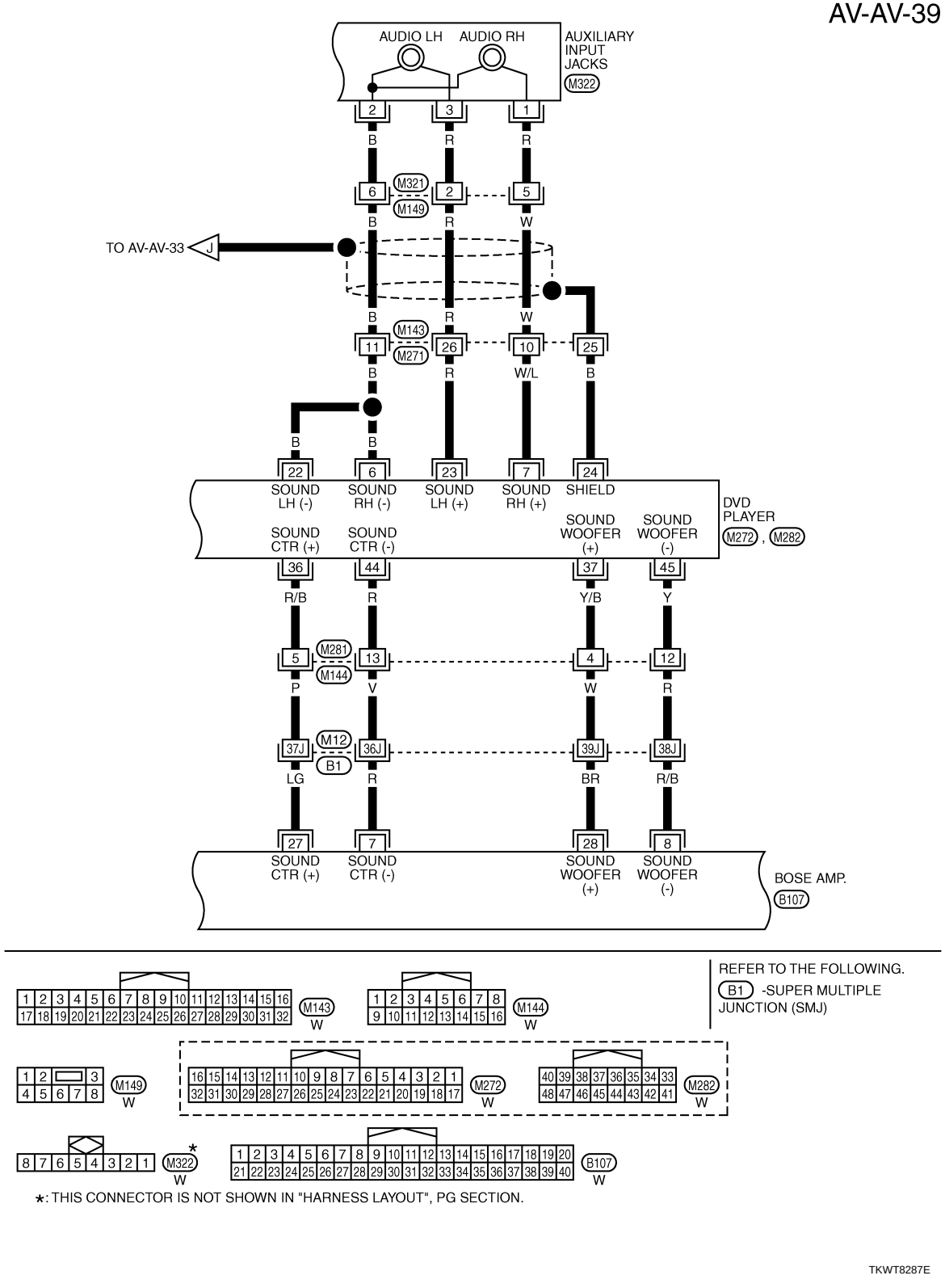




REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

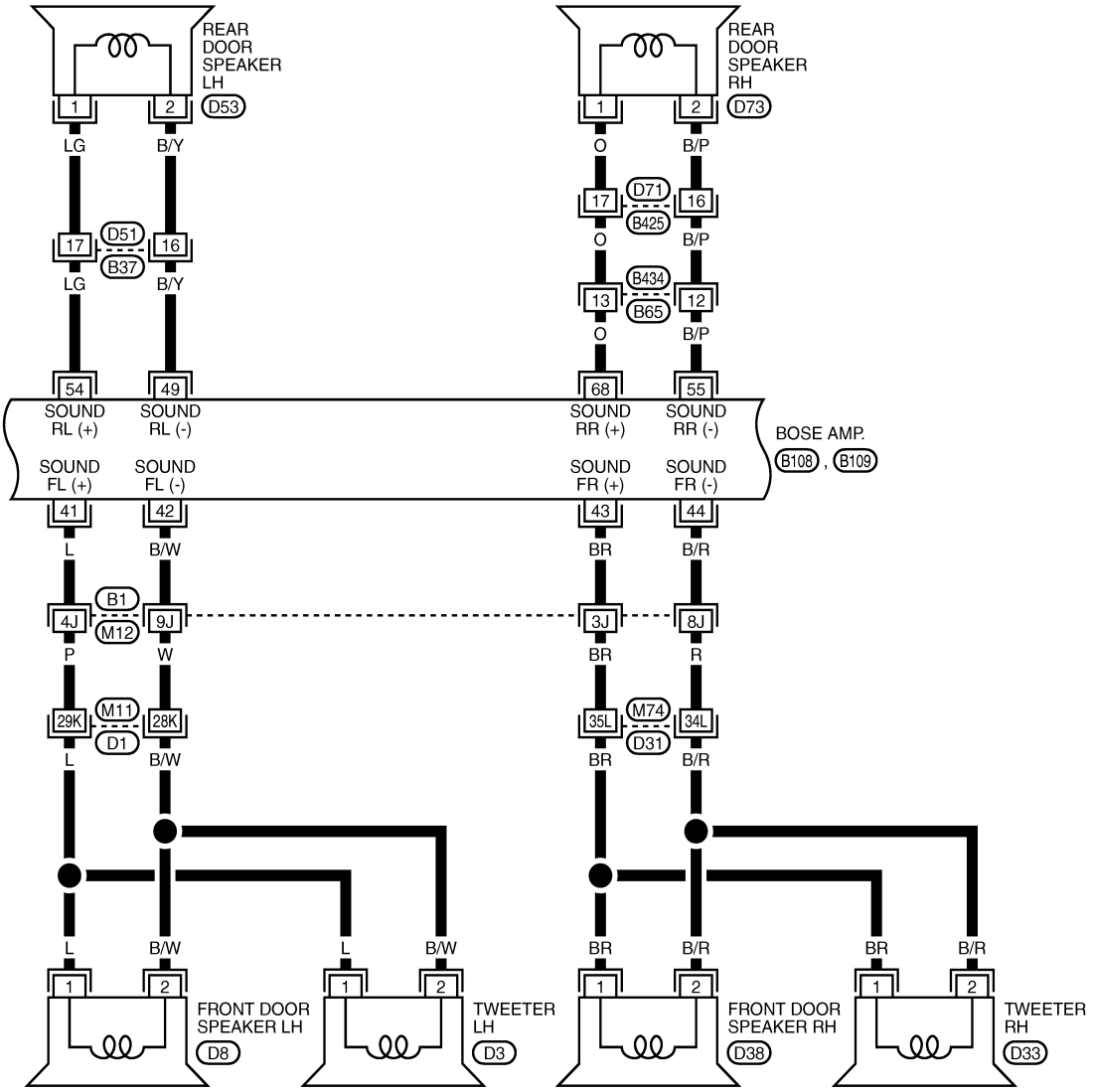
TKWT6716E

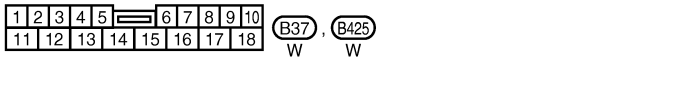
AV-AV-39

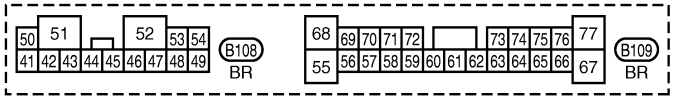


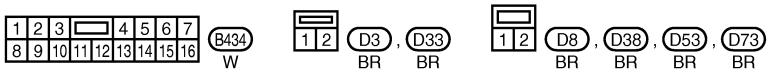
TKWT8287E

AV-AV-40





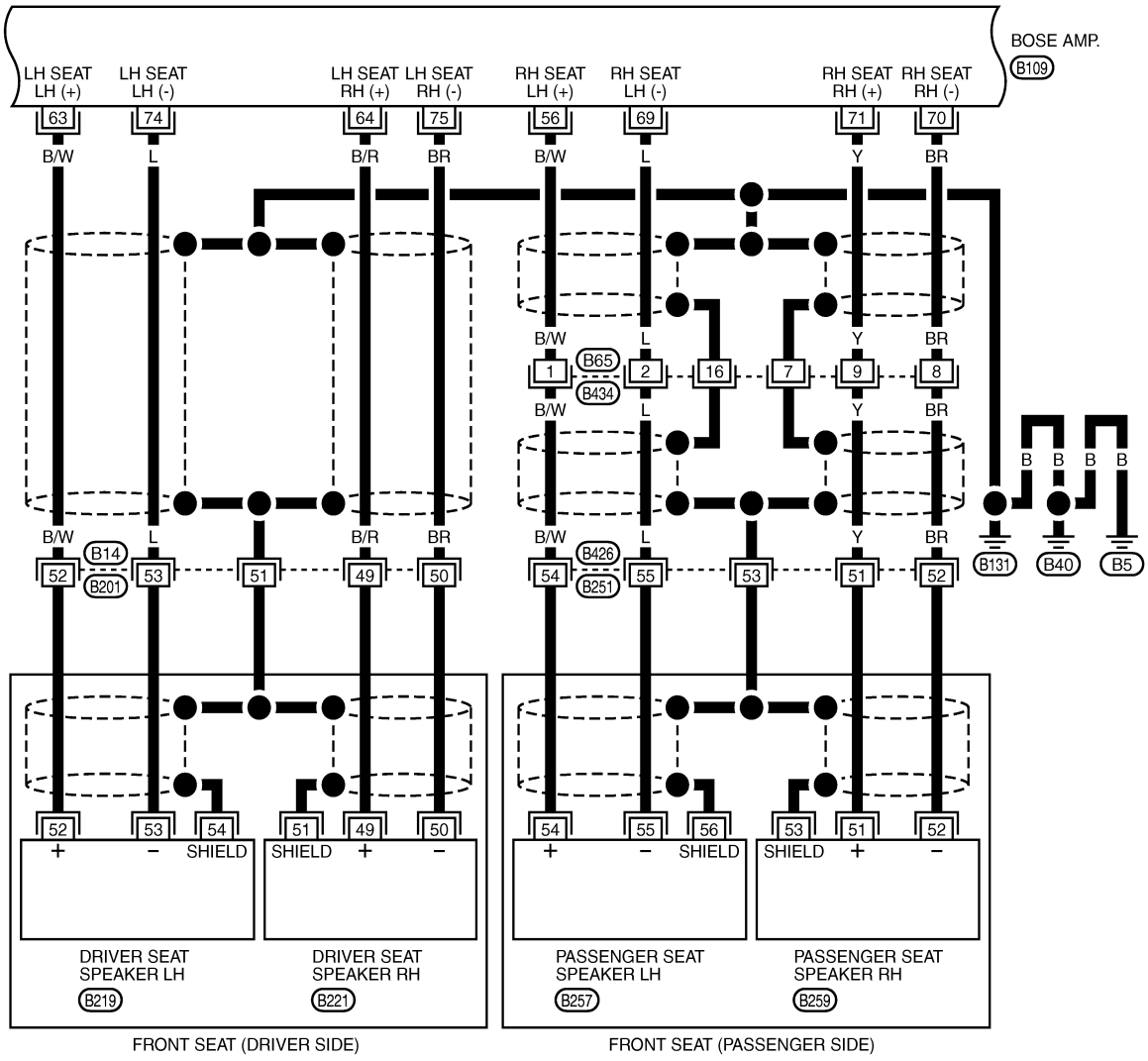


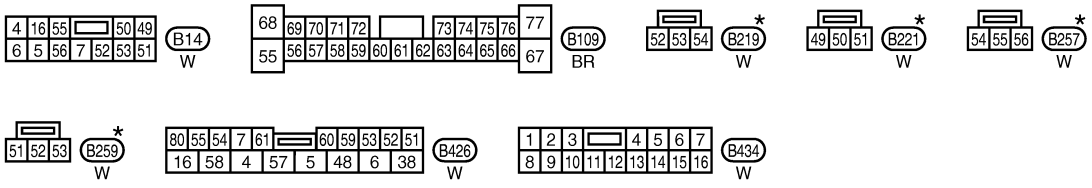


REFER TO THE FOLLOWING.
B1 , D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6718E

AV-AV-41

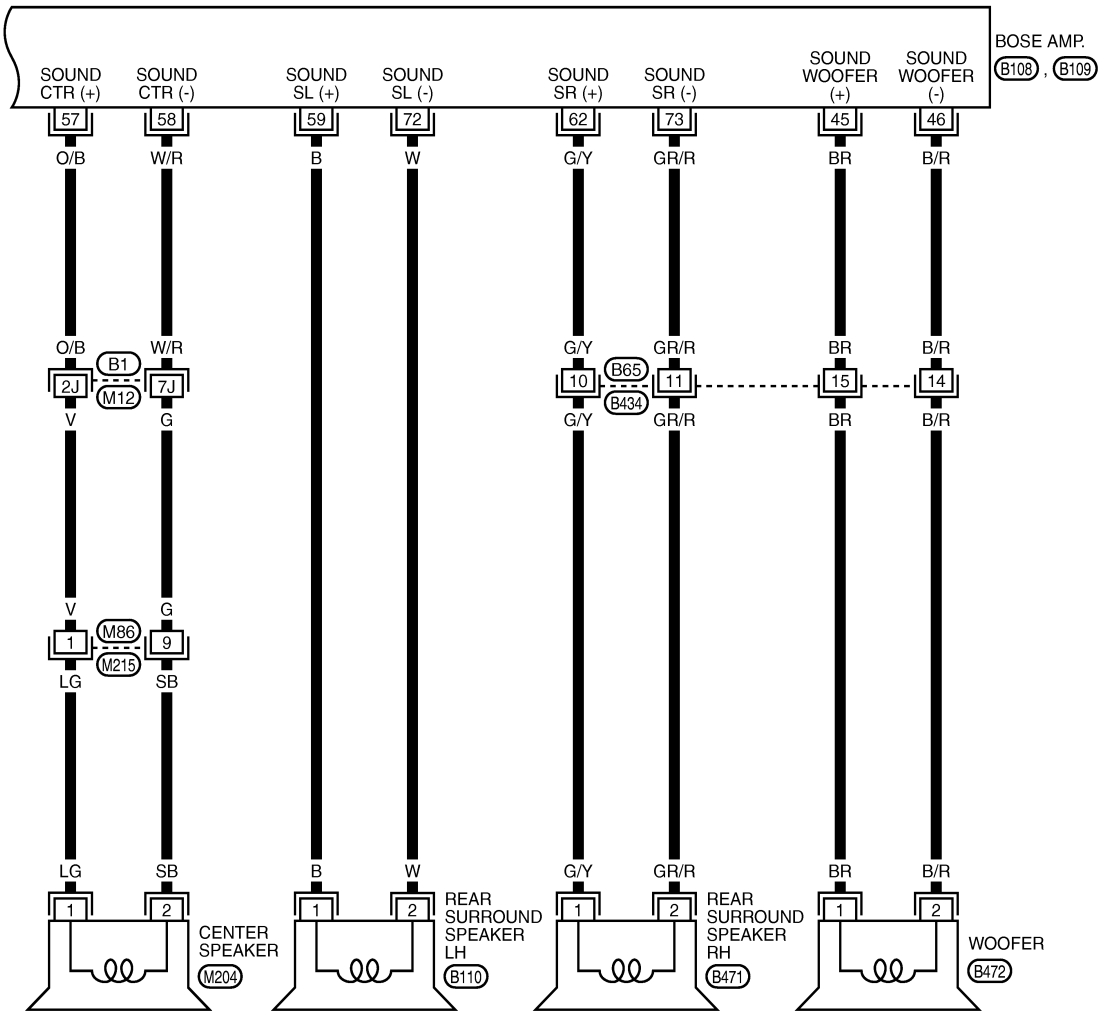


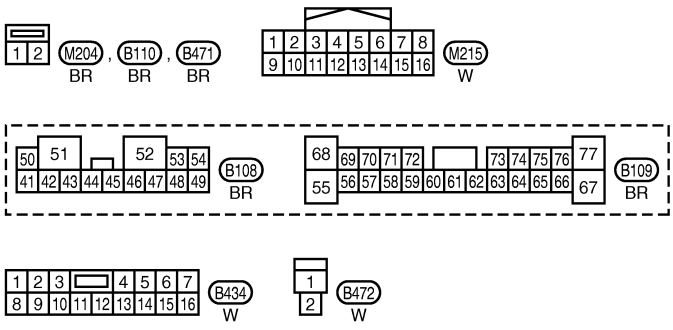


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6719E

AV-AV-42

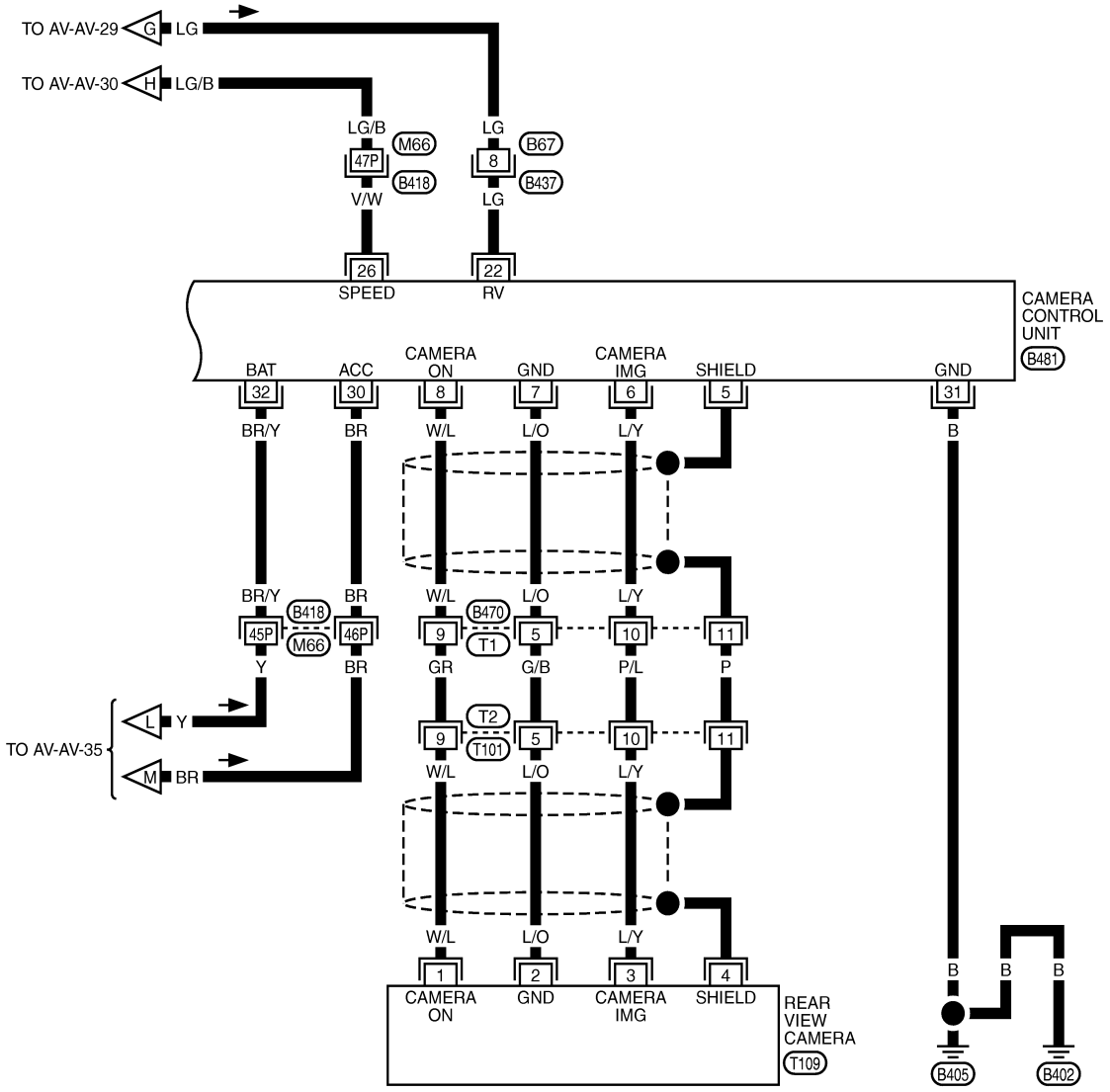


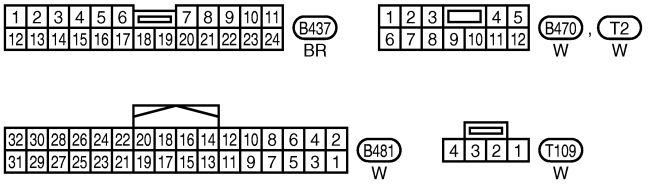


REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6720E

AV-AV-43





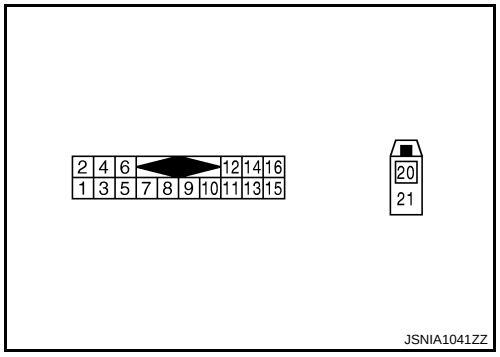
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6721E

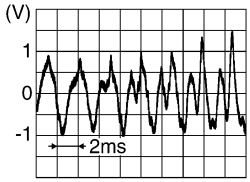
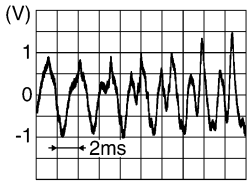
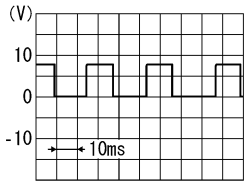
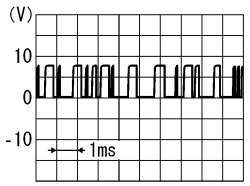
SATELLITE RADIO TUNER

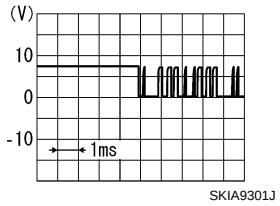
Reference Value

INFOID:0000000004155833



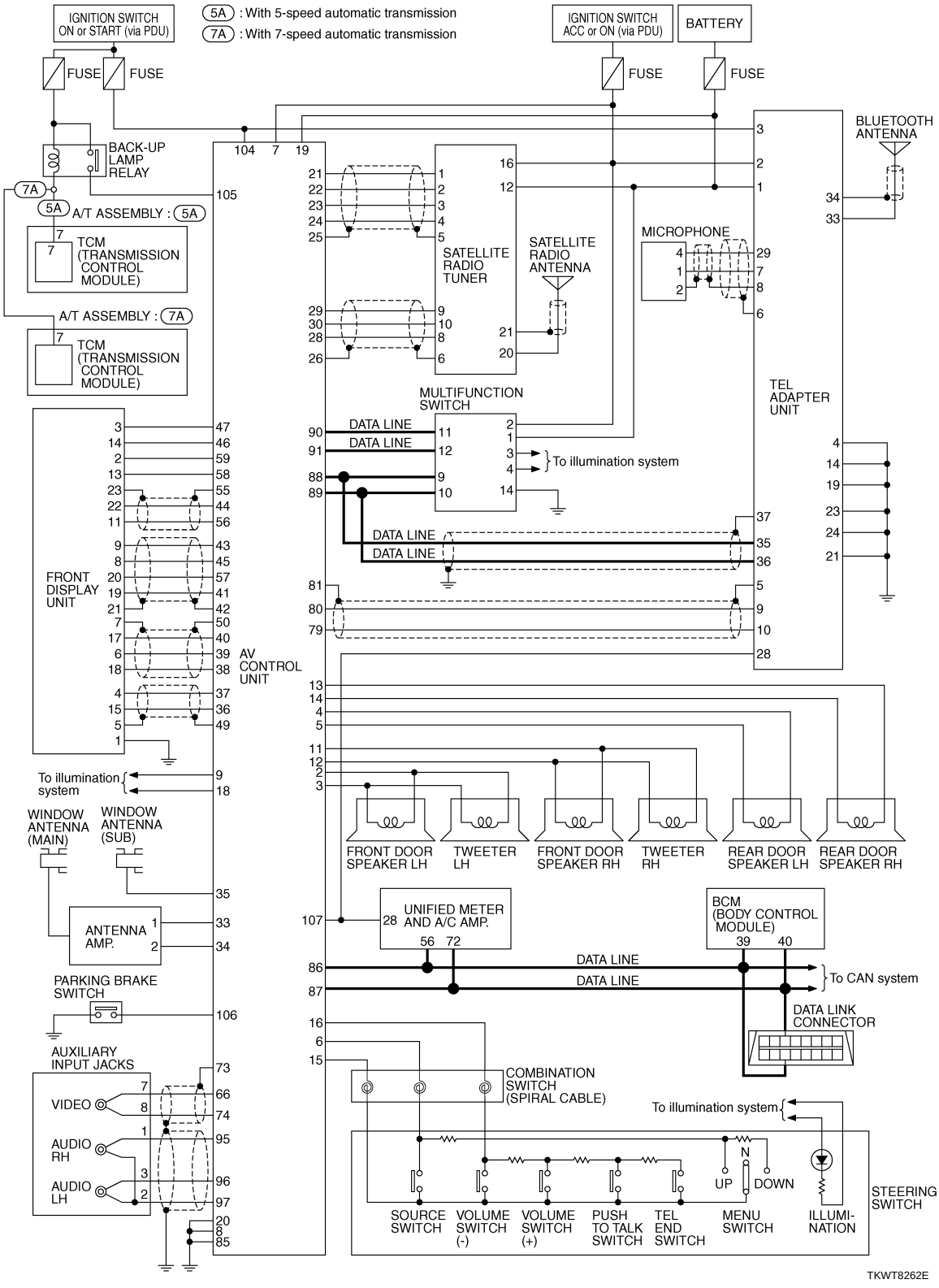
PHYSICAL VALUES

Terminal		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
2 (R)	1 (G)	Satellite radio sound signal LH	Output	Ignition switch ON	When satellite radio mode is selected.	
4 (B)	3 (W)	Satellite radio sound signal RH	Output	Ignition switch ON	When satellite radio mode is selected.	
5	—	Shield	—	—	—	—
6	—	Shield	—	—	—	—
8 (B)	Ground	Request signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected.	
9 (R)	Ground	Communication signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected.	

Terminal		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
10 (W)	Ground	Communication signal (CONT→SAT)	Input	Ignition switch ON	When satellite radio mode is selected.	 SKIA9301J
12 (BR/Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
16 (BR)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
20	—	Satellite antenna	Input	—	—	—
21	—	Shield	—	—	—	—

Schematic - Base Audio System -

INFOID:0000000004380472



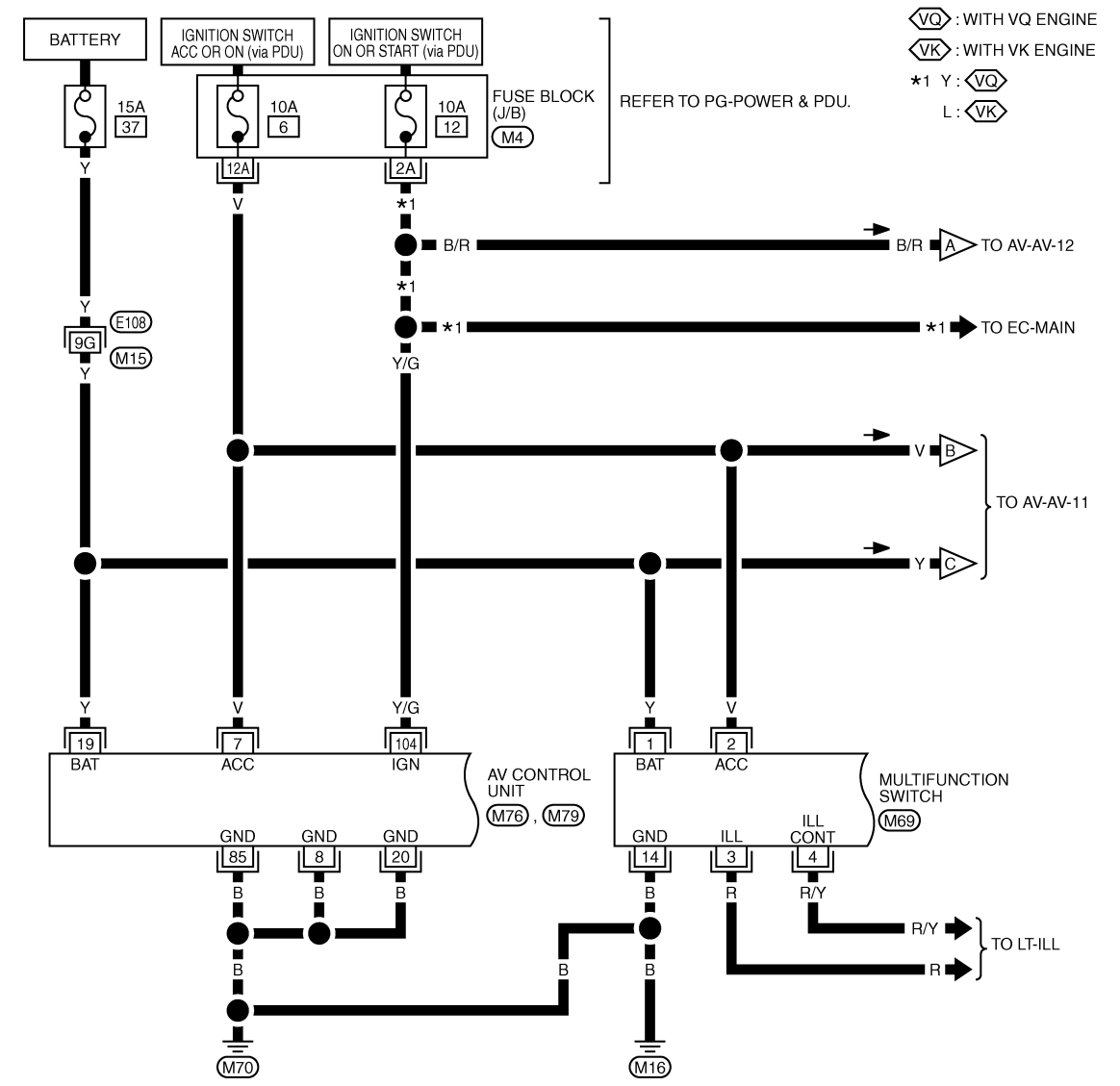
Wiring Diagram - AV - / Base Audio System

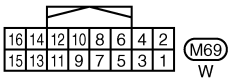
INFOID:0000000004380473

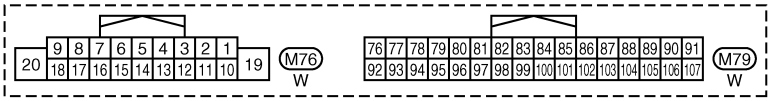
NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

AV-AV-01



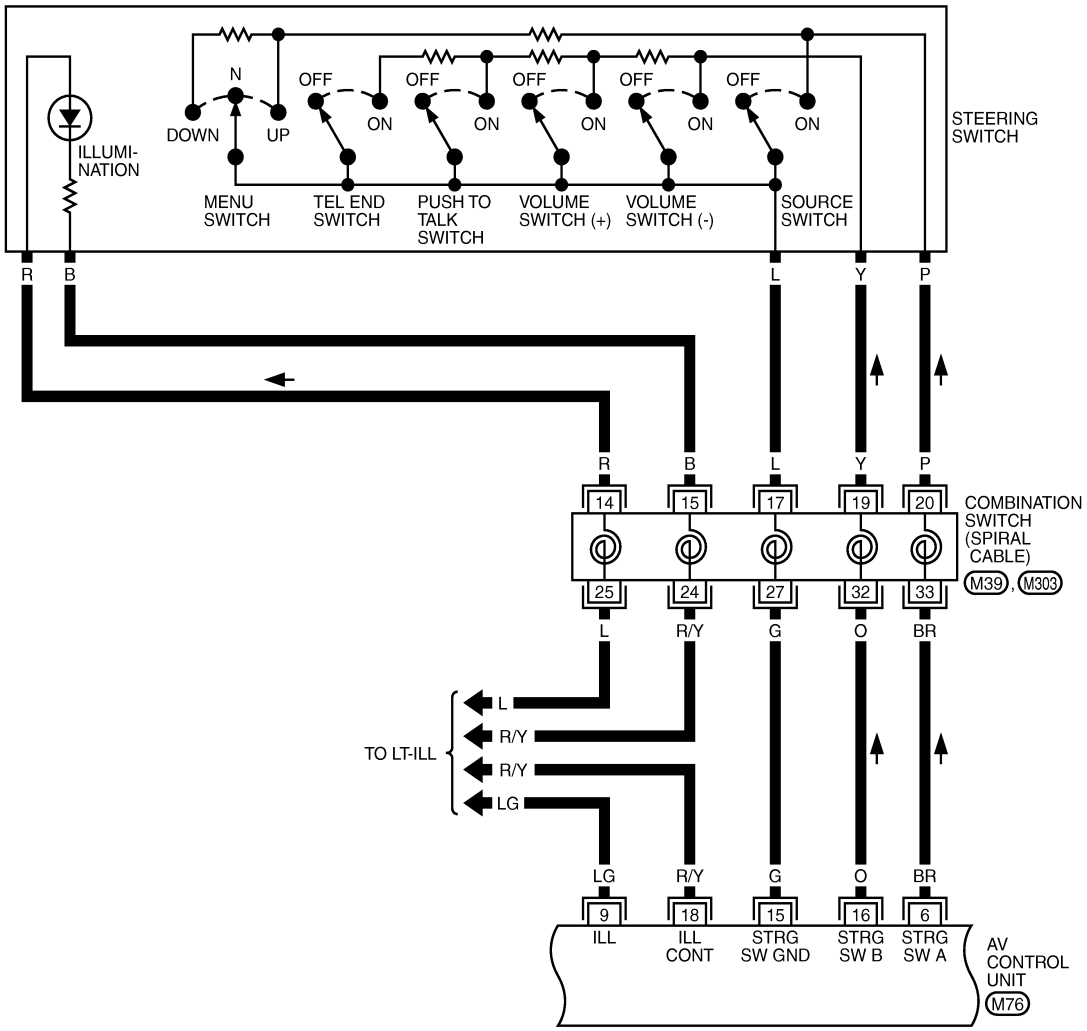


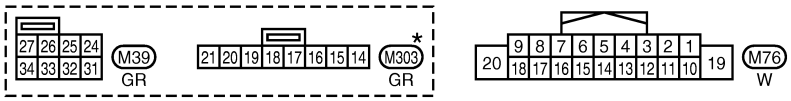


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8263E

AV-AV-02

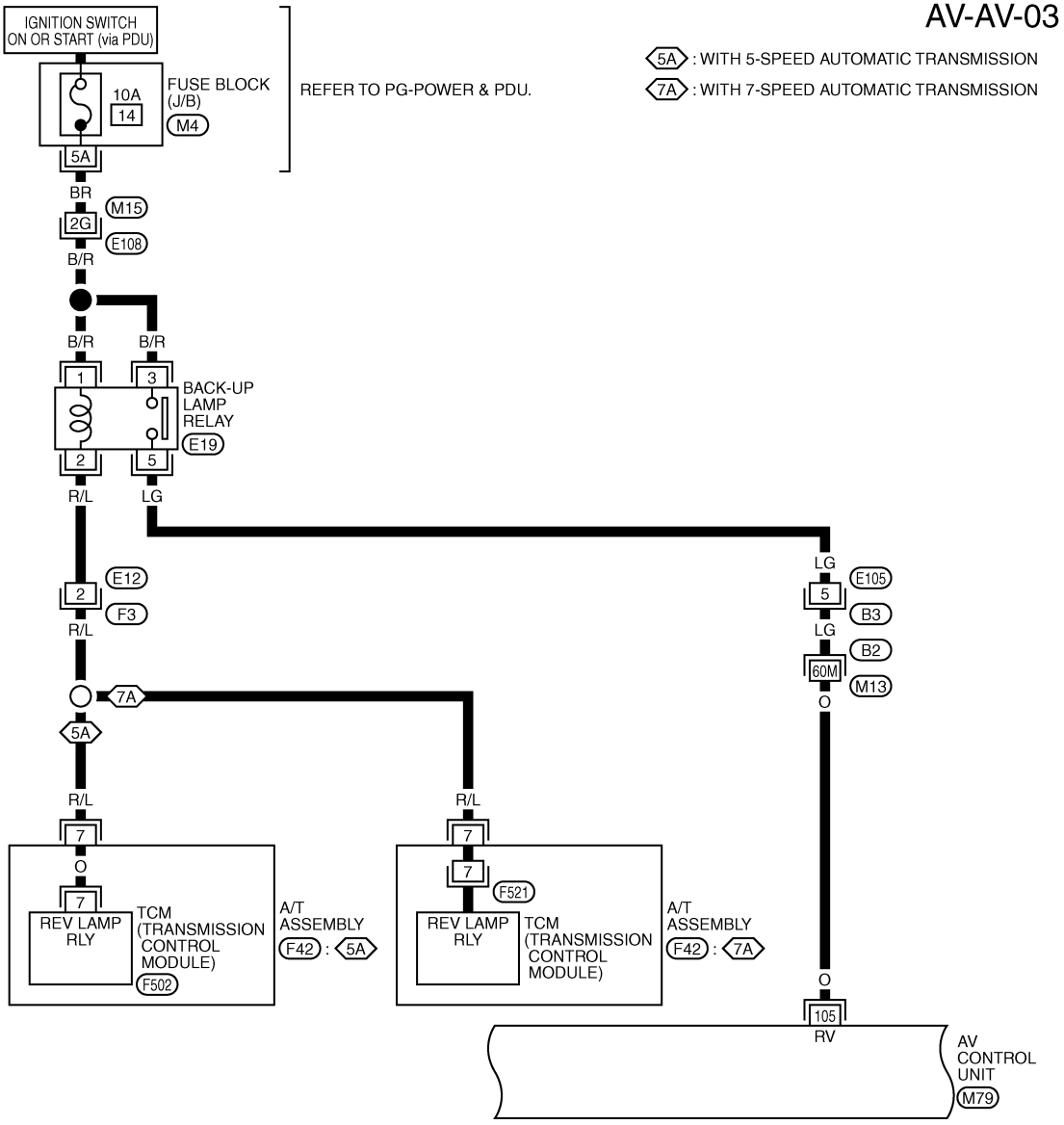


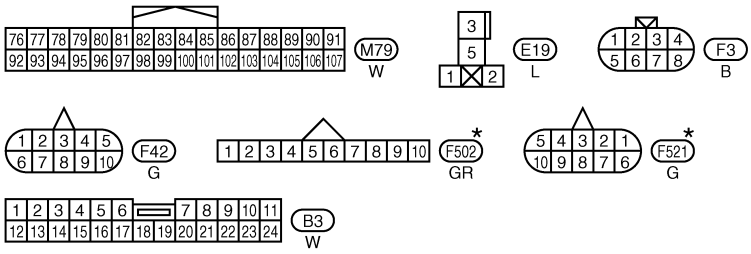


★ : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6674E

AV-AV-03



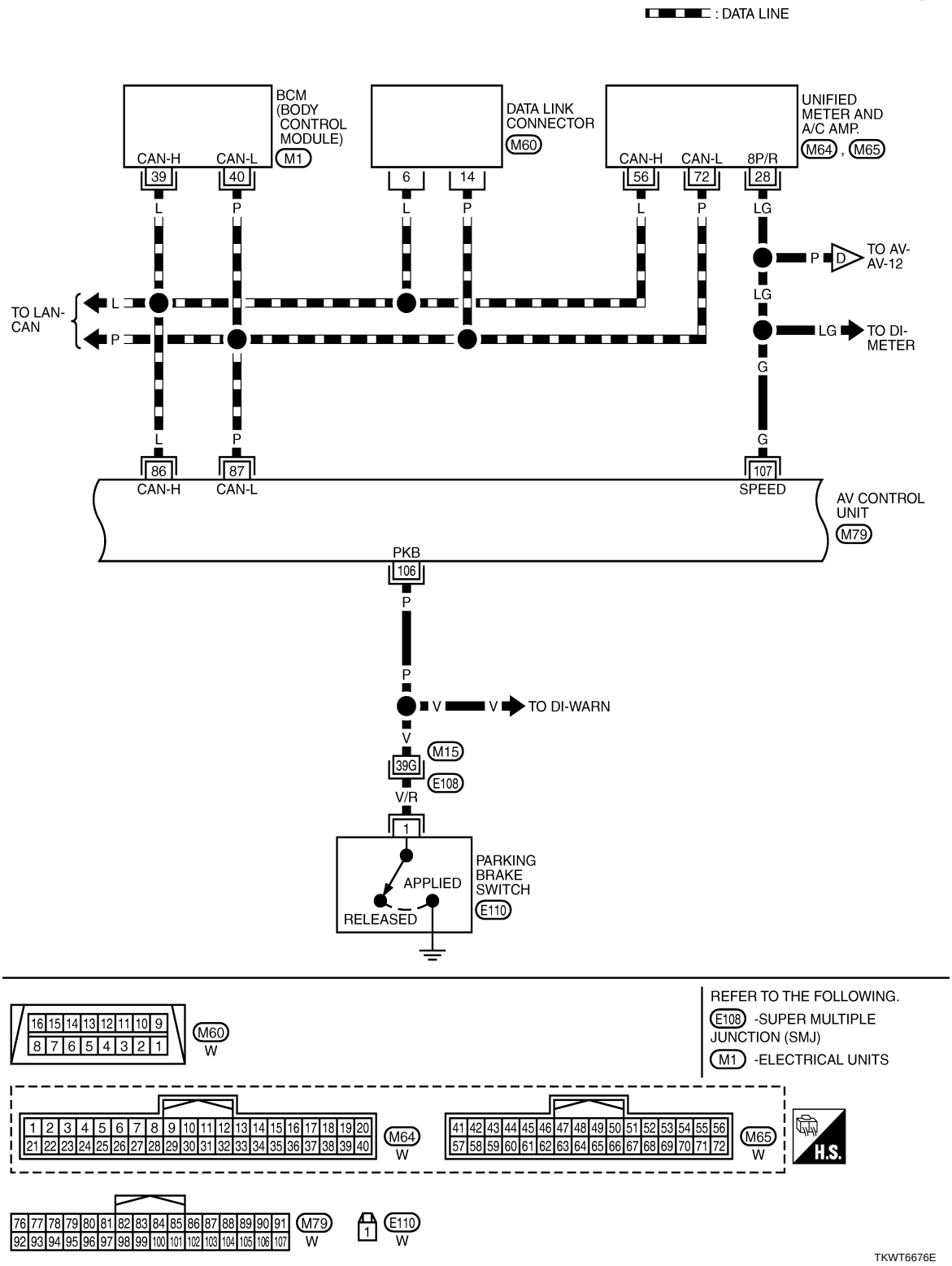


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

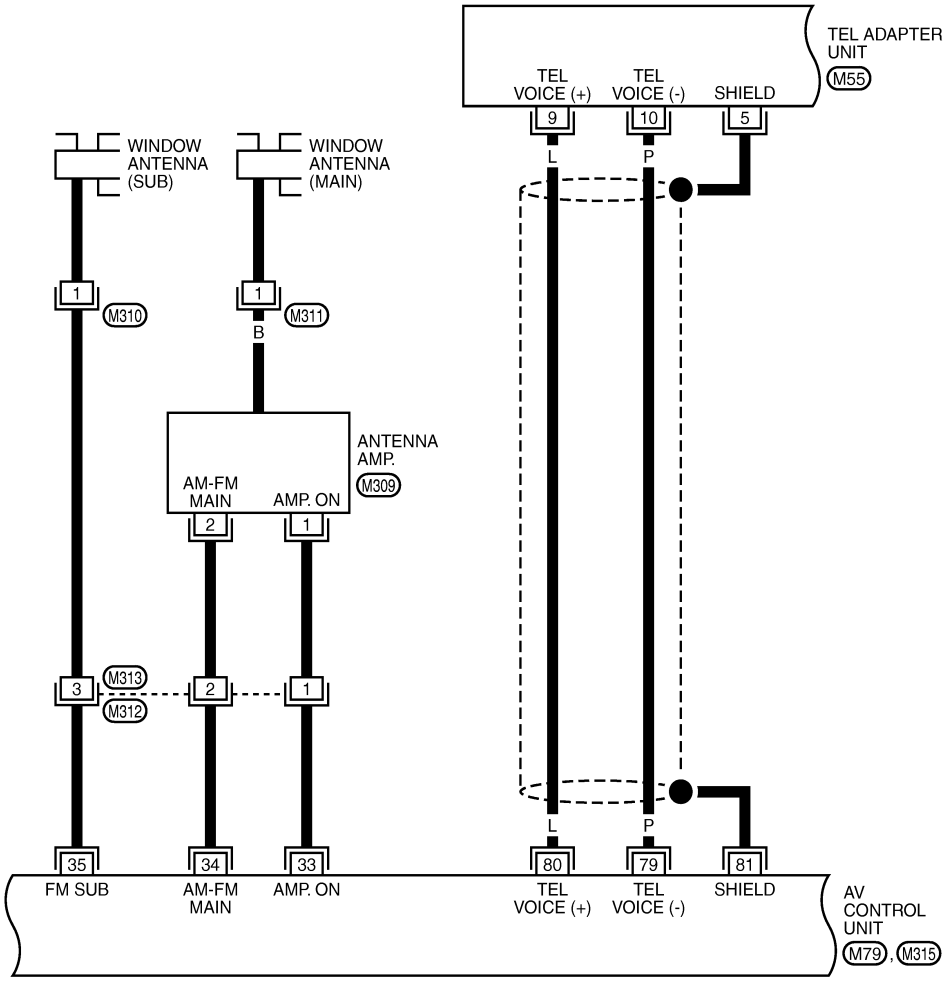
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

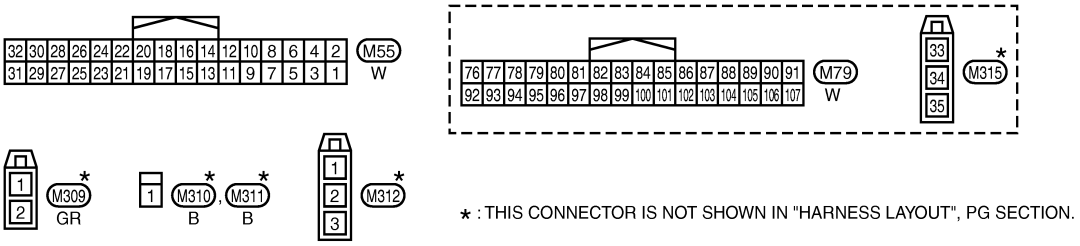
TKWT8264E

AV-AV-04


: DATA LINE
BCM (BODY CONTROL MODULE)
M1
CAN-H
CAN-L
39
40
DATA LINK CONNECTOR
M60
6
14
UNIFIED METER AND A/C AMP.
M64, M65
CAN-H
CAN-L
8P/R
56
72
28
L
P
LG
TO AV-AV-12
TO LAN-CAN
TO DI-METER
G
86
87
107
CAN-H
CAN-L
SPEED
AV CONTROL UNIT
M79
PKB
106
V
TO DI-WARN
M15
39G
E108
V/R
1
PARKING BRAKE SWITCH
E110
APPLIED
RELEASED
REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M1 -ELECTRICAL UNITS
M60
W
M64
W
M65
W
H.S.
M79
W
E110
W
TKWT6676E

AV-AV-05

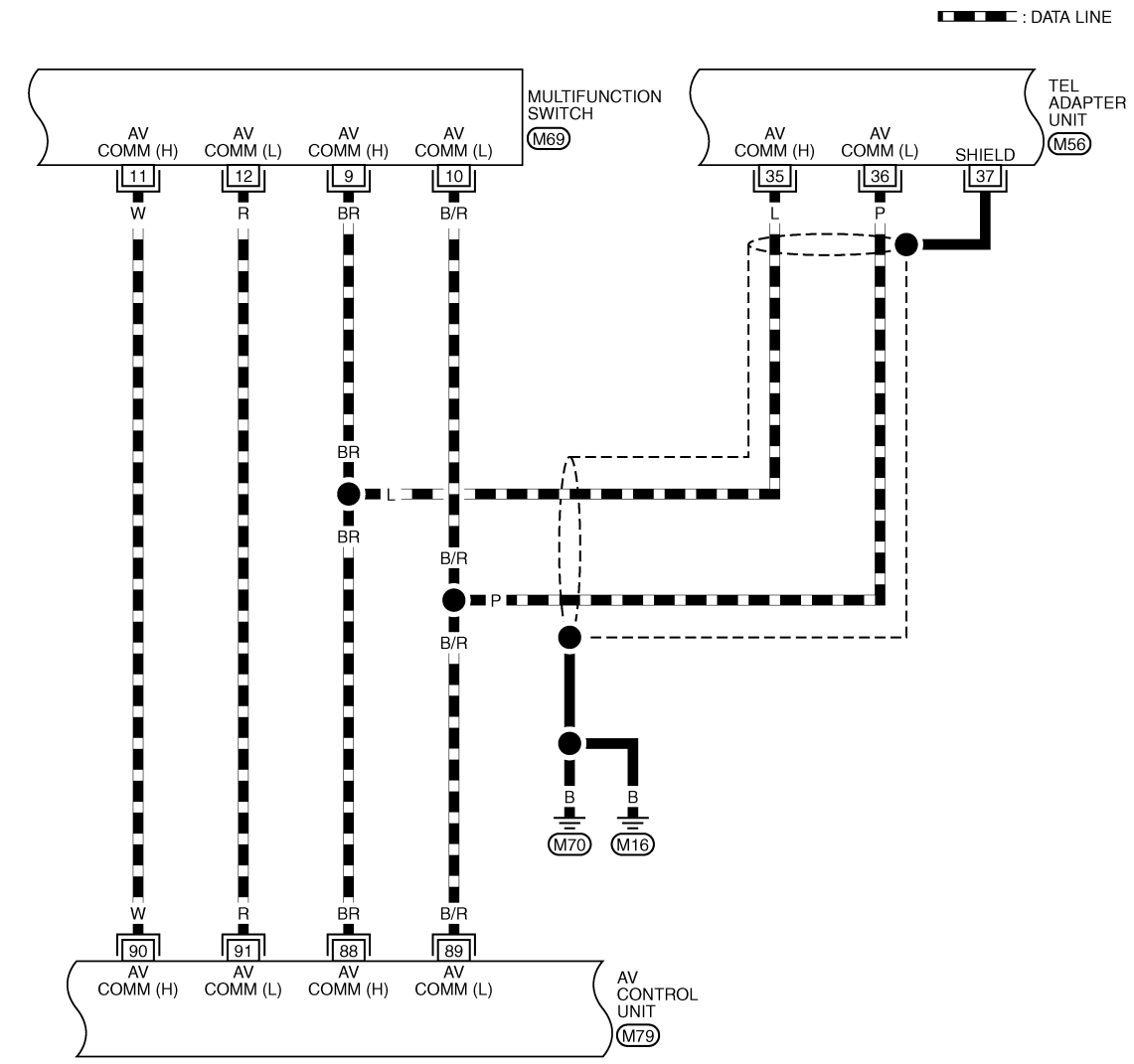


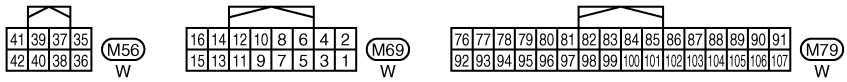


* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6677E

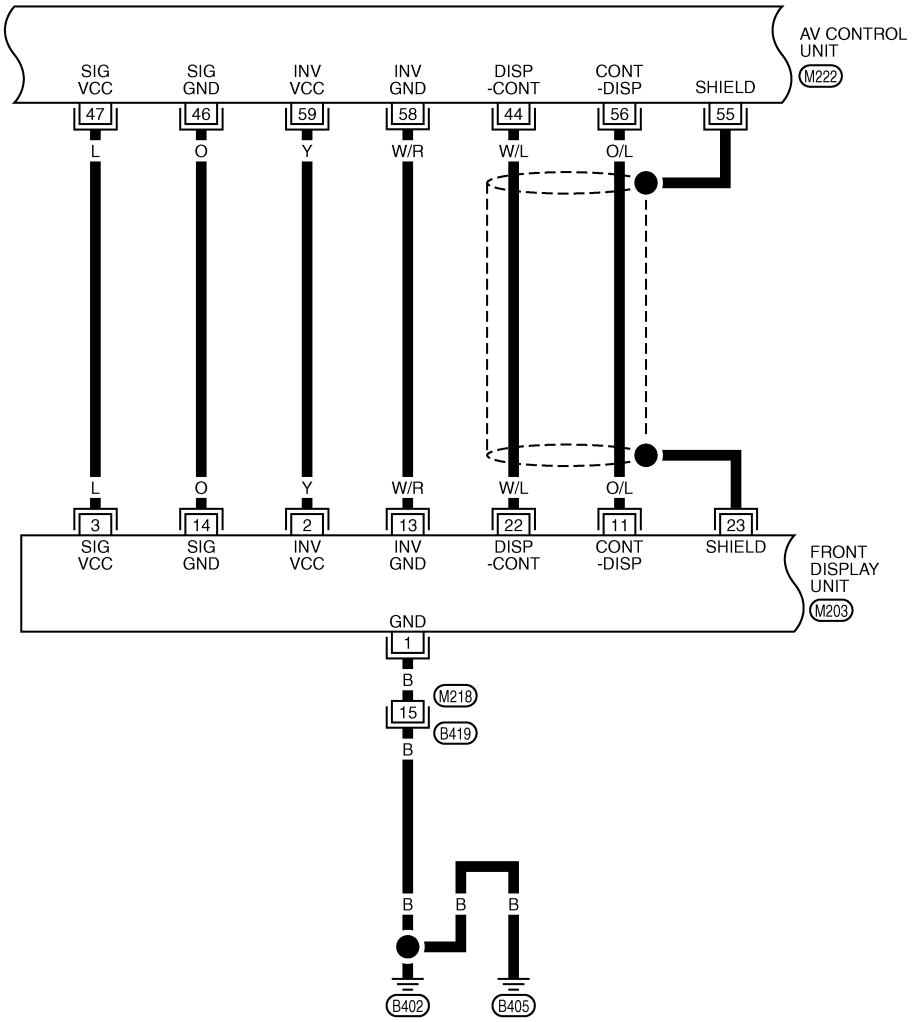
AV-AV-06

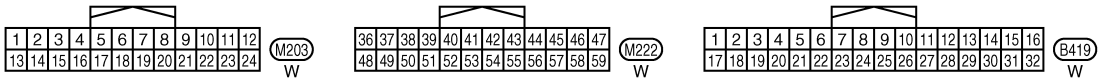




TKWT8265E

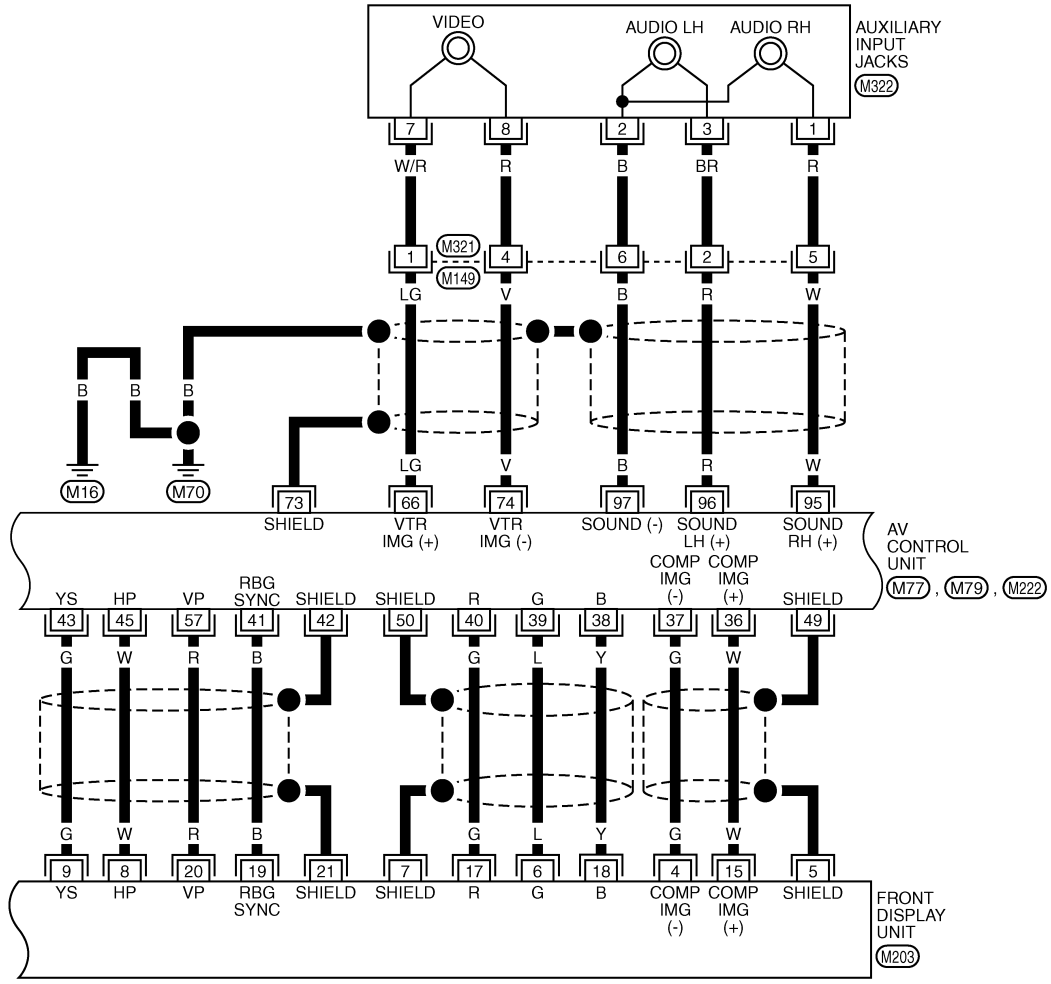
AV-AV-07

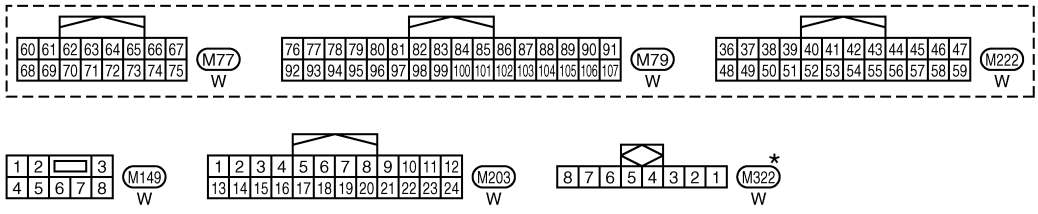




TKWT8266E

AV-AV-08

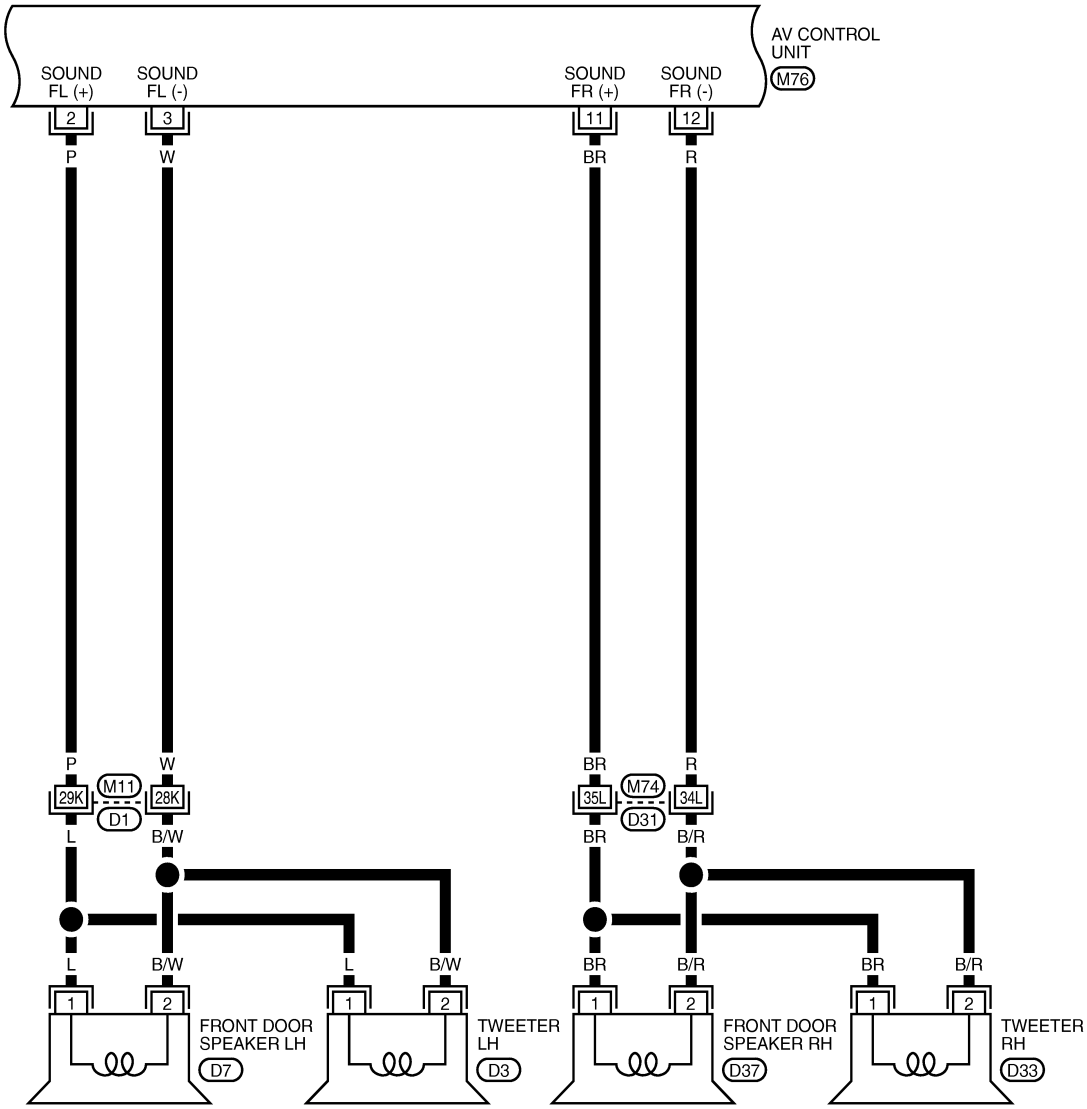


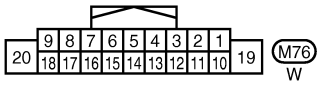


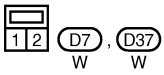
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8267E

AV-AV-09



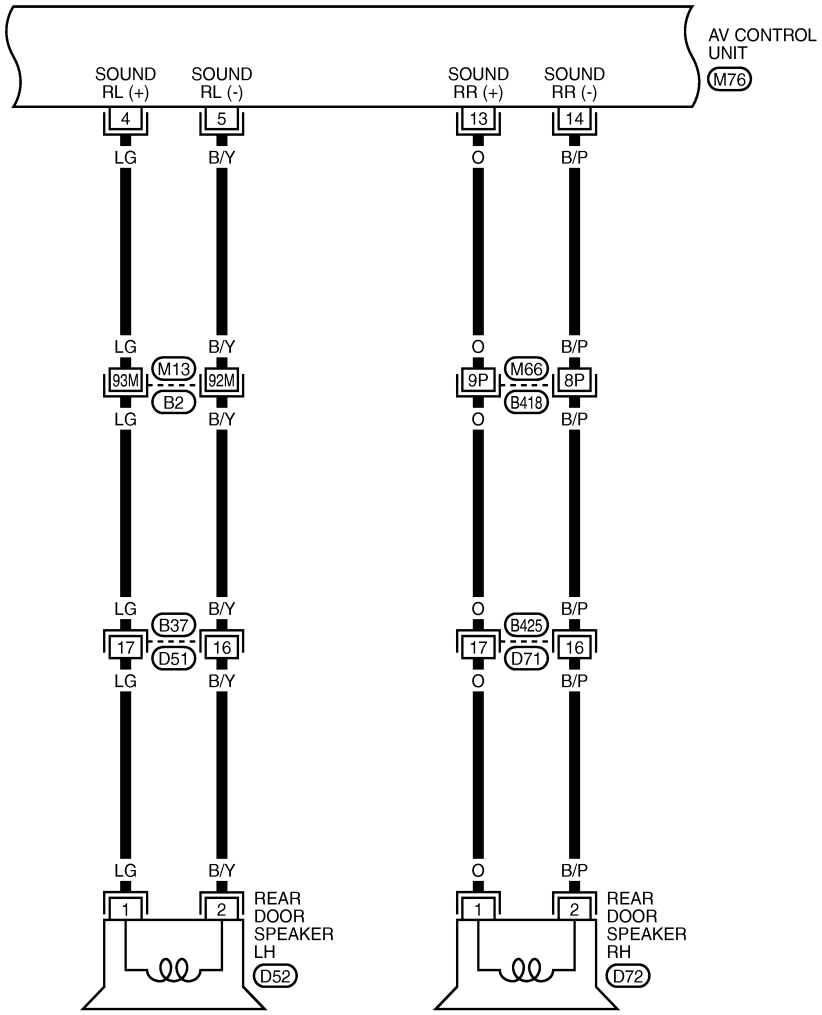


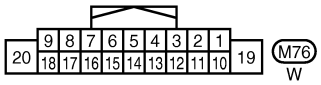


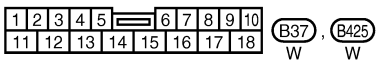
REFER TO THE FOLLOWING.
D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

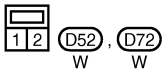
TKWT6681E

AV-AV-10





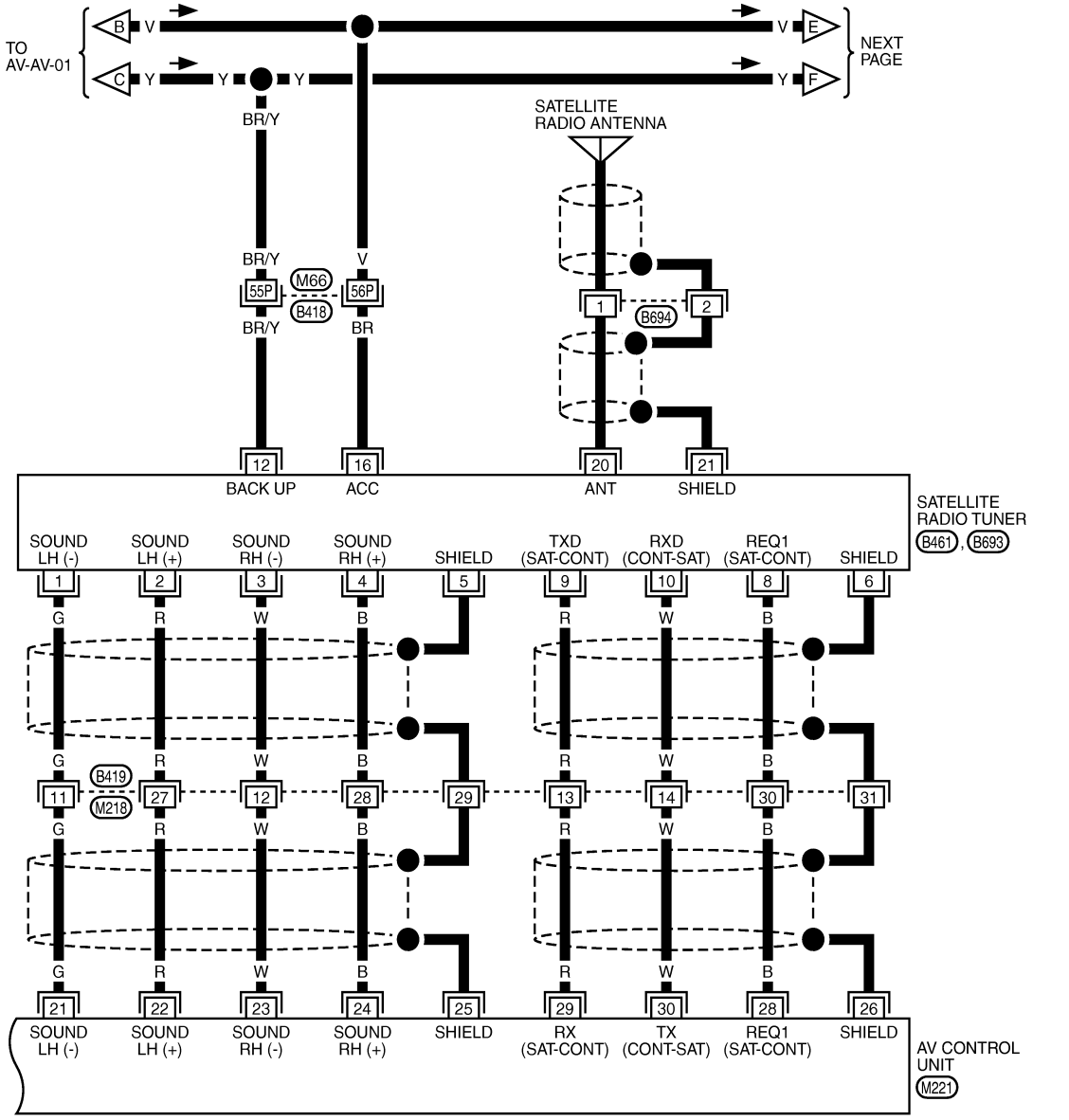


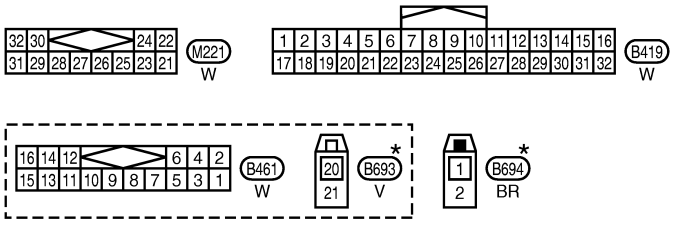


REFER TO THE FOLLOWING.
B2 , B418 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT6682E

AV-AV-11



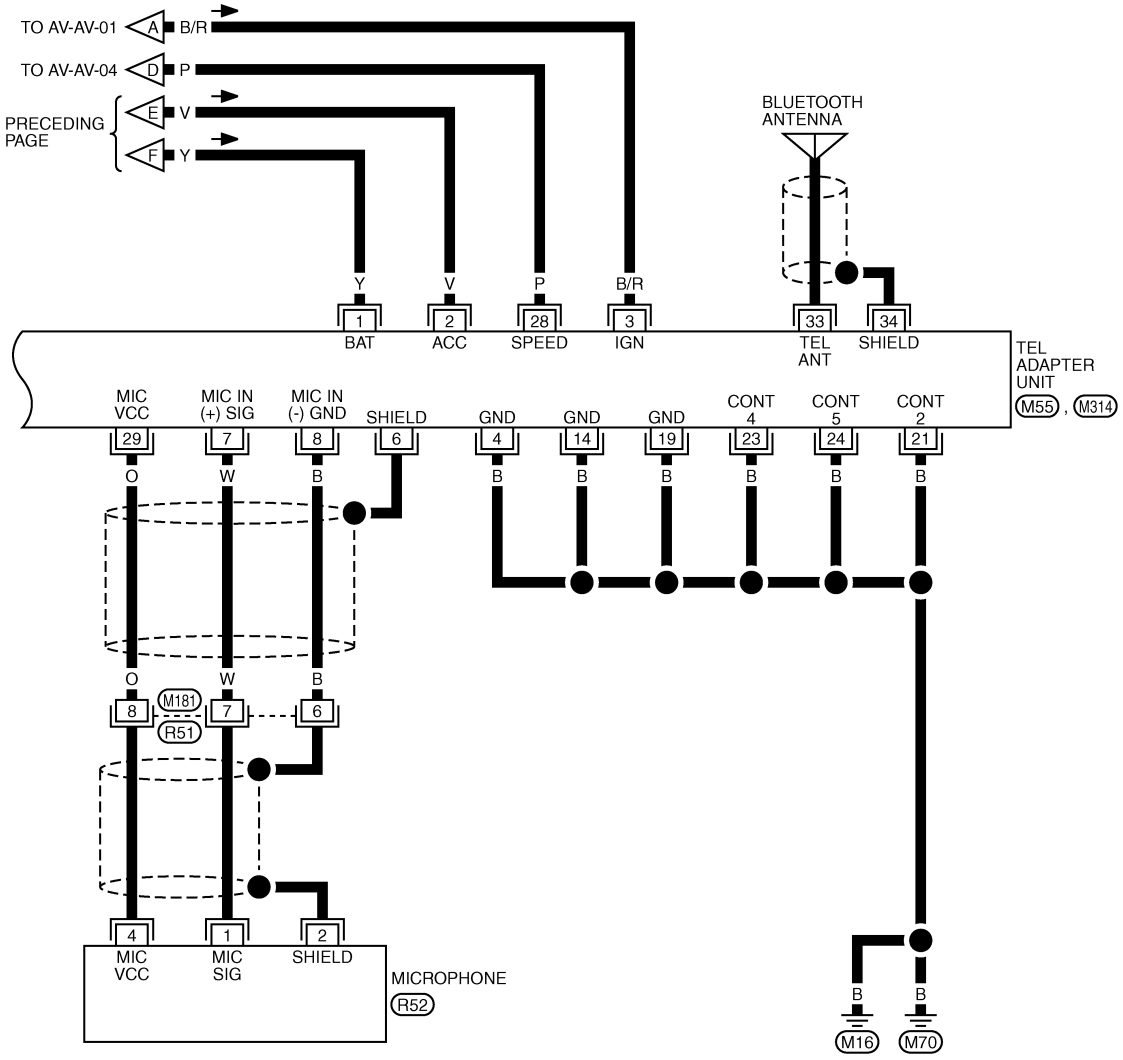


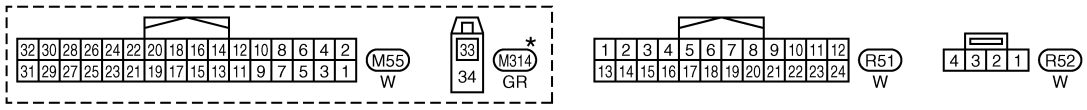
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6683E

AV-AV-12





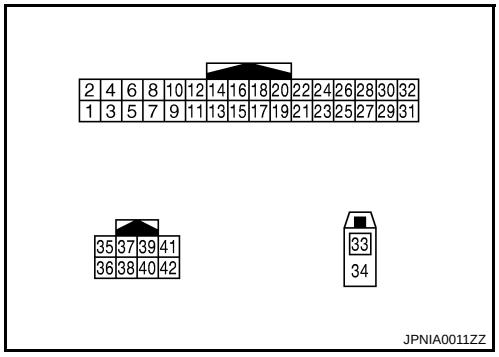
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8268E

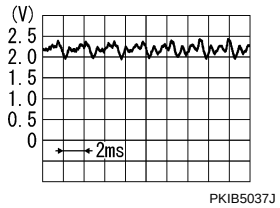
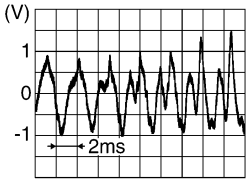
TEL ADAPTER UNIT

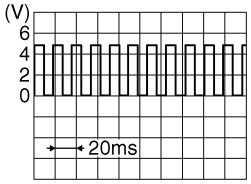
Reference Value

INFOID:0000000004155836



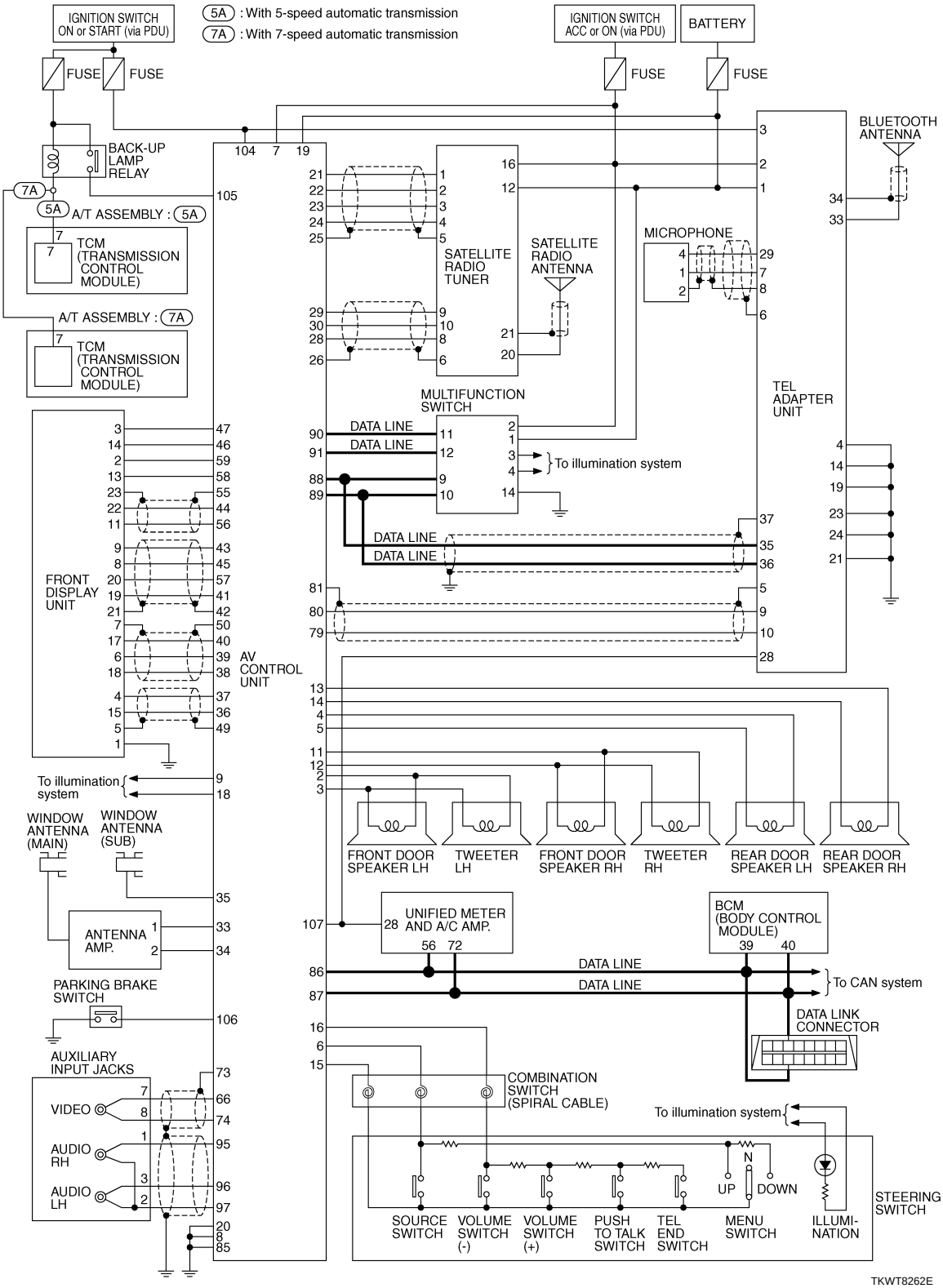
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
2 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
3 (B/R)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
5	—	Shield	—	—	—	—
6	—	Shield	—	—	—	—
7 (W)	8 (B)	Microphone signal	Input	Ignition switch ON	Give a voice.	 PKIB5037J
8 (B)	Ground	Microphone Ground	—	Ignition switch ON	—	0 V
9 (L)	10 (P)	TEL voice signal	Output	Ignition switch ON	During voice guide output with the switch pressed.	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
14 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
19 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
21 (B)	Ground	Control signal 2	Input	Ignition switch ON	—	0 V
23 (B)	Ground	Control signal 4	Input	Ignition switch ON	—	0 V
24 (B)	Ground	Control signal 5	Input	Ignition switch ON	—	0 V
28 (P)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25MPH).	**NOTE:** Maximum voltage may be 12 V due to specifications (connected units).  SKIA6649J
29 (O)	8 (B)	Microphone VCC	Output	Ignition switch ON	—	5 V
33	—	TEL antenna	Input	—	—	—
34	—	Shield	—	—	—	—
35 (L)	—	AV communication signal (H)	Input/ Output	—	—	—
36 (P)	—	AV communication signal (L)	Input/ Output	—	—	—
37	—	Shield	—	—	—	—

Schematic - Base Audio System -

INFOID:0000000004380474



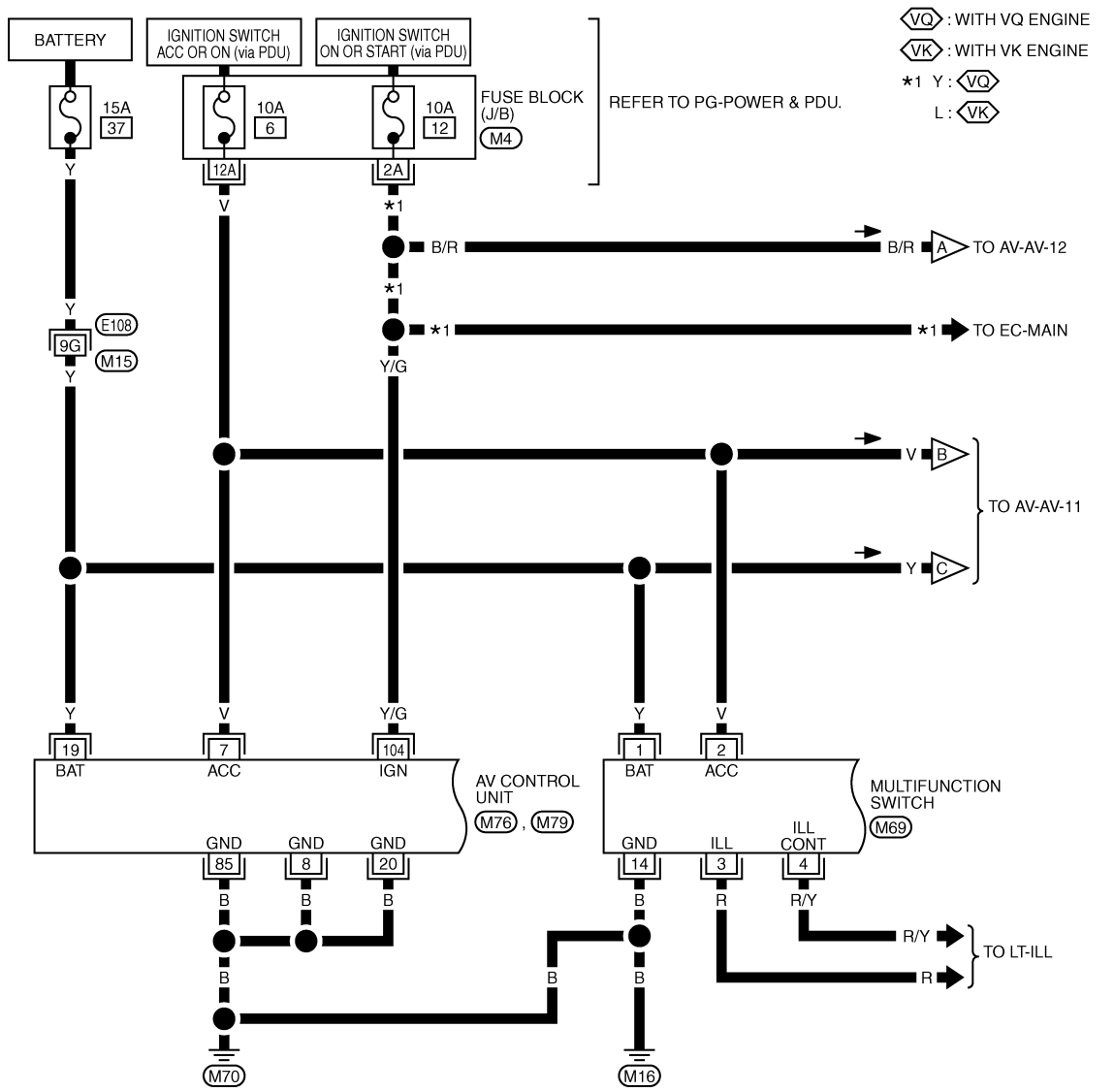
Wiring Diagram - AV - / Base Audio System

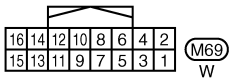
INFOID:0000000004380475

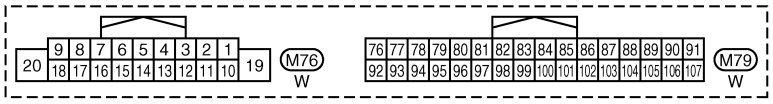
NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

AV-AV-01



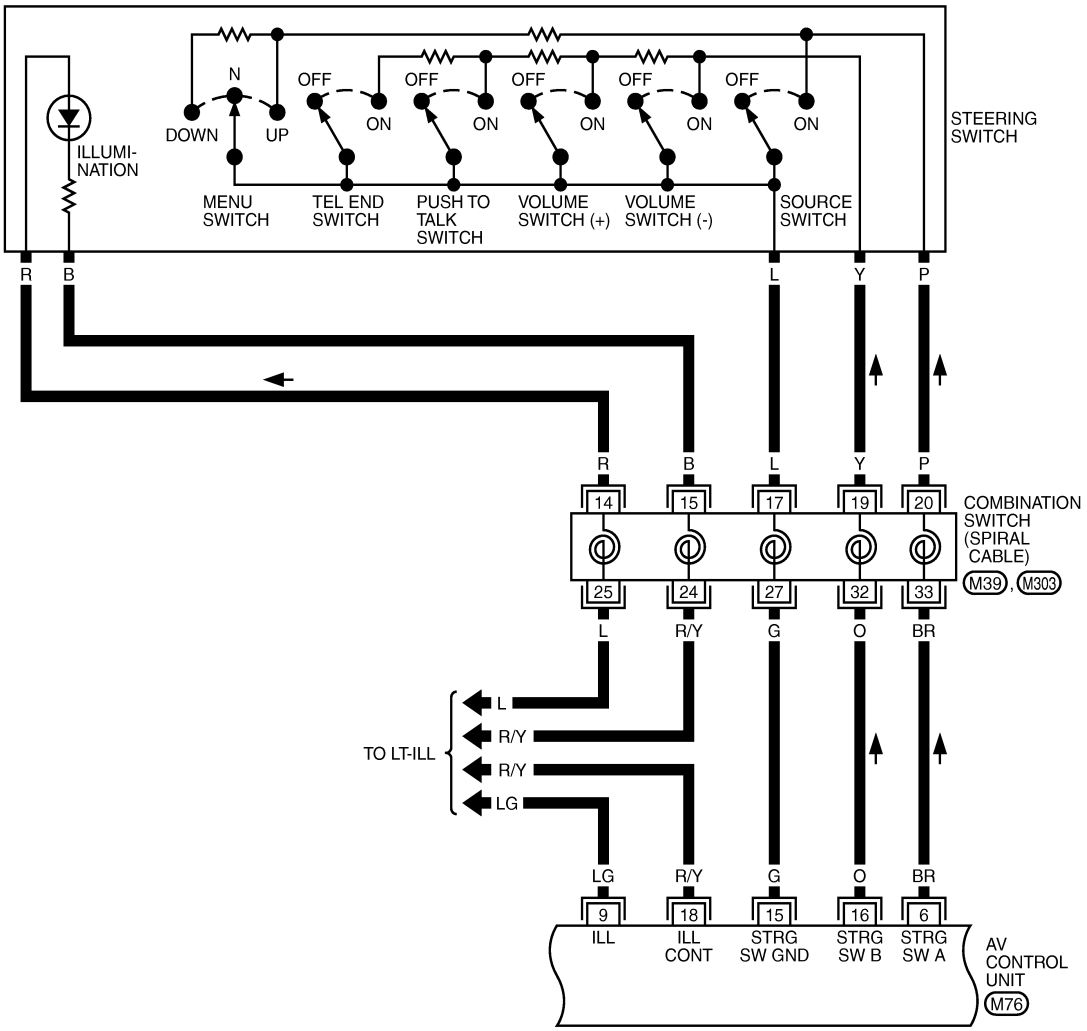


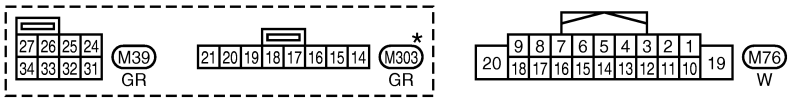


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8263E

AV-AV-02

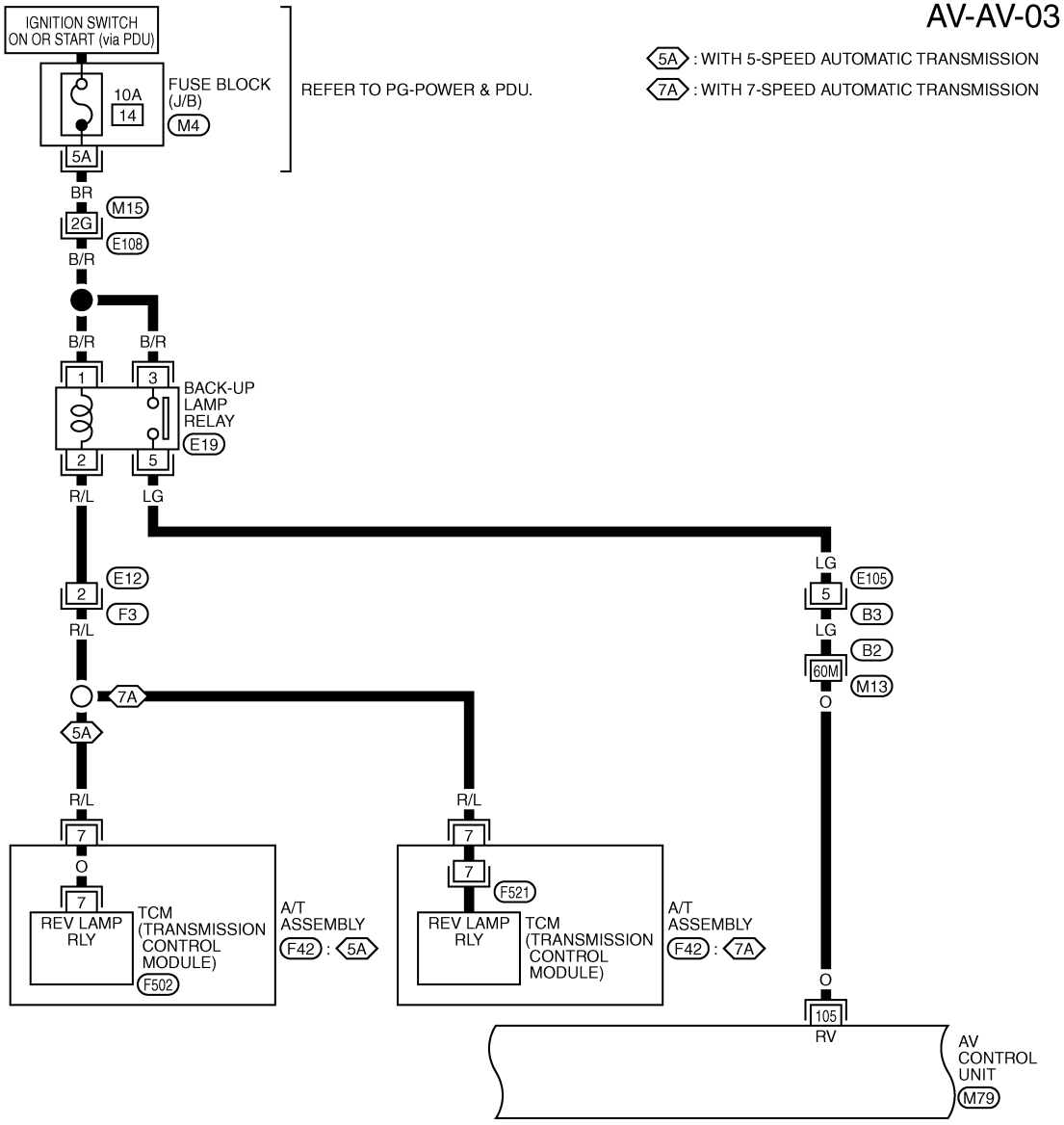


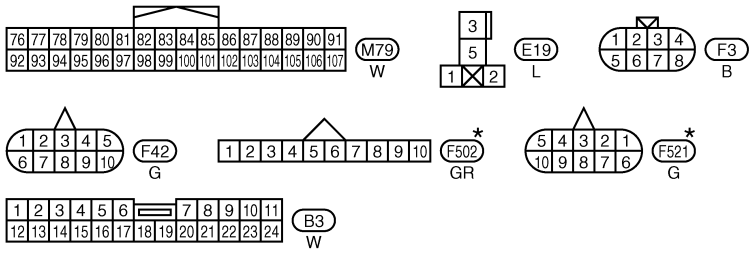


* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6674E

AV-AV-03



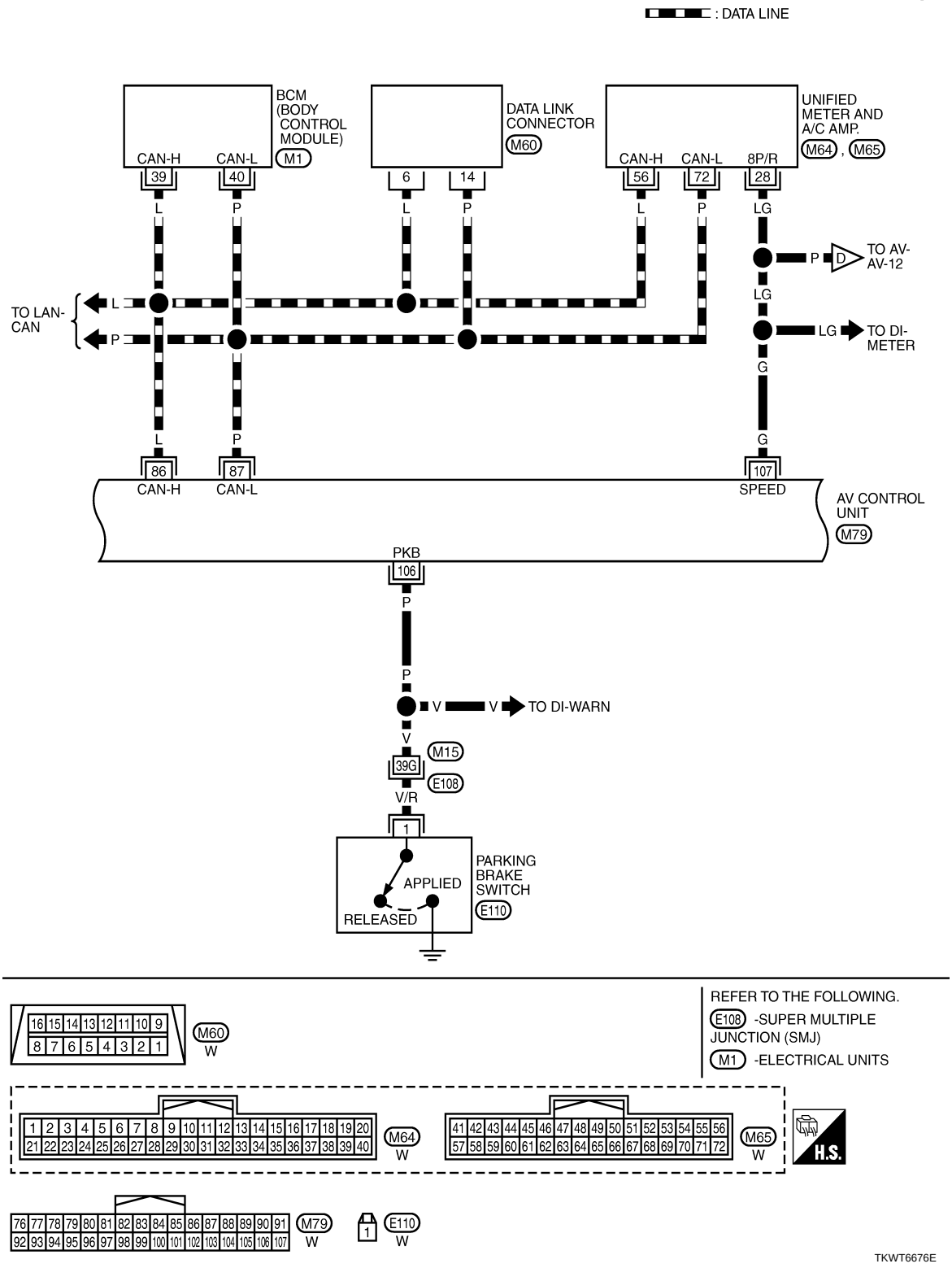


∗: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

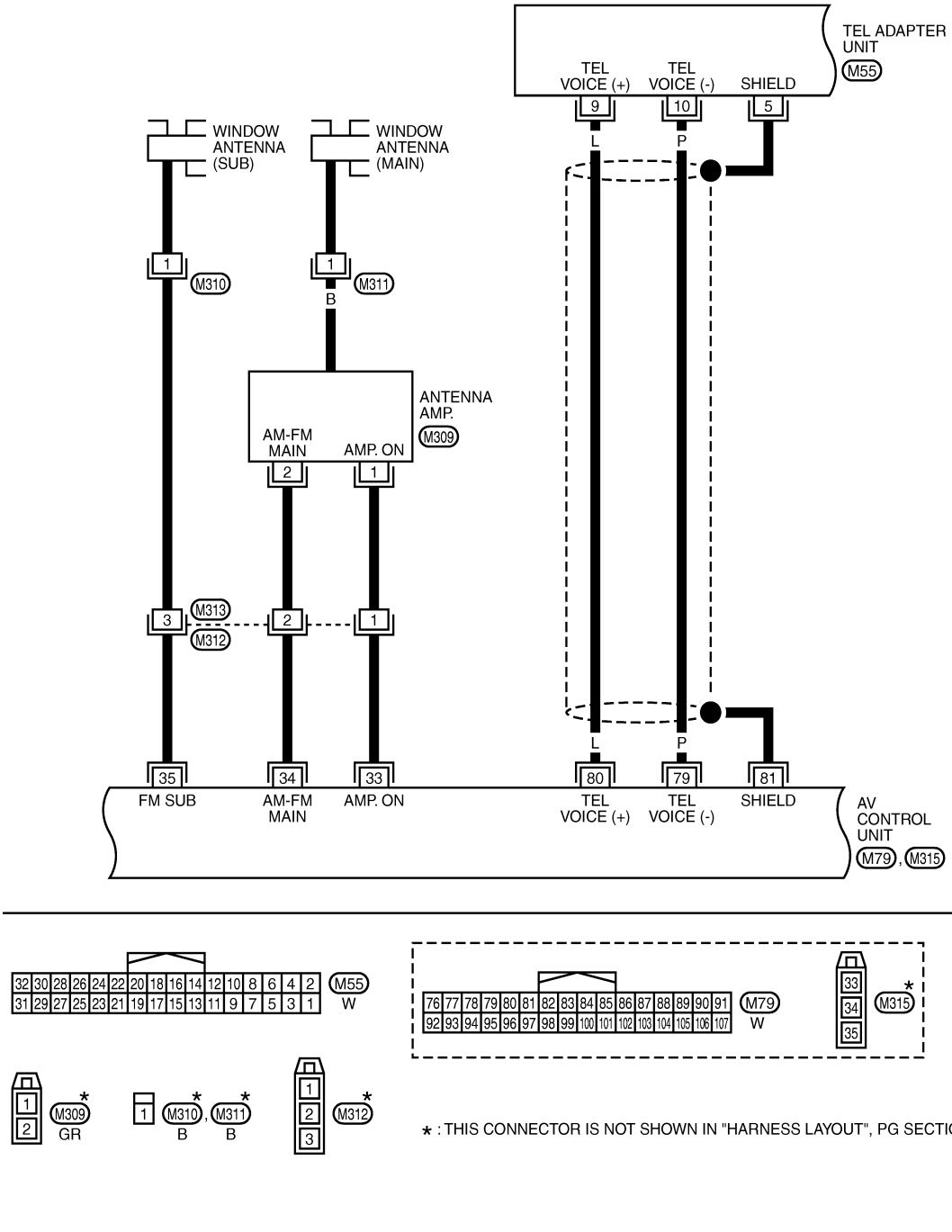
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8264E

AV-AV-04

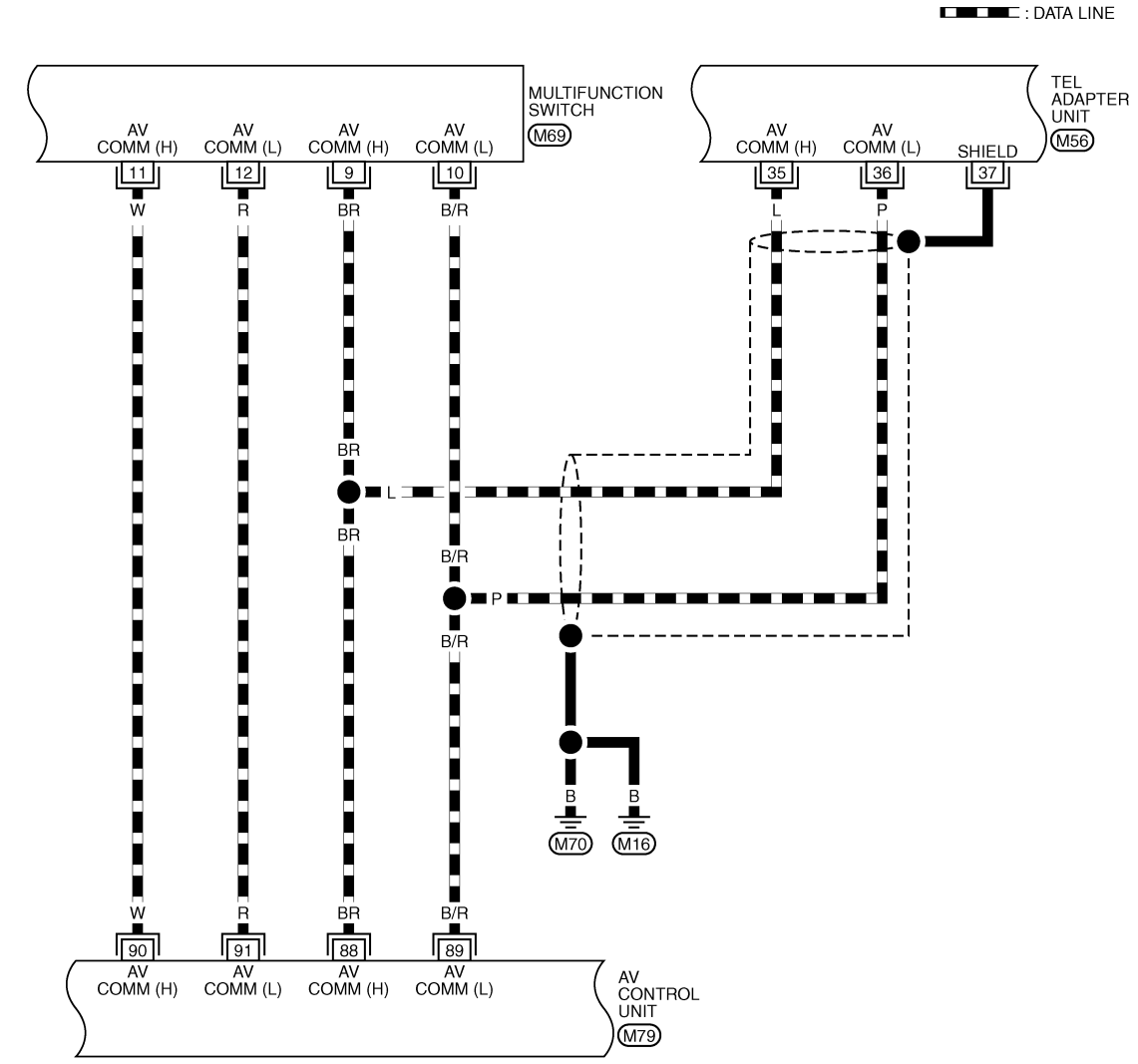

: DATA LINE
BCM (BODY CONTROL MODULE)
M1
CAN-H
CAN-L
39
40
DATA LINK CONNECTOR
M60
6
14
UNIFIED METER AND A/C AMP.
M64, M65
CAN-H
CAN-L
8P/R
56
72
28
TO LAN-CAN
TO AV-AV-12
TO DI-METER
86
87
107
CAN-H
CAN-L
SPEED
AV CONTROL UNIT
M79
PKB
106
TO DI-WARN
M15
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH
E110
M60
W
REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M1 -ELECTRICAL UNITS
M64
W
M65
W
H.S.
M79
W
E110
W
TKWT6676E

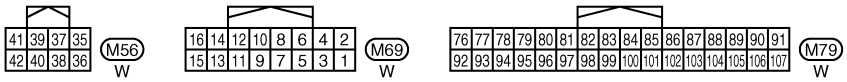
AV-AV-05



TKWT6677E

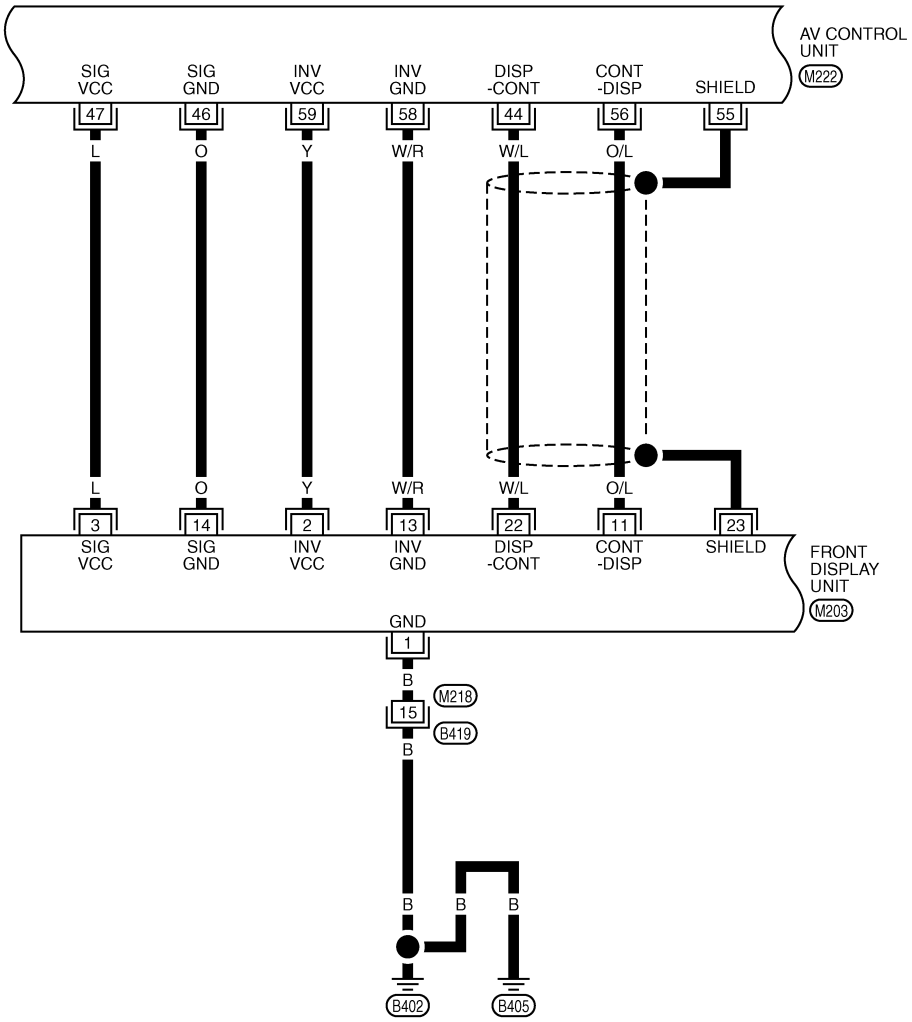
AV-AV-06

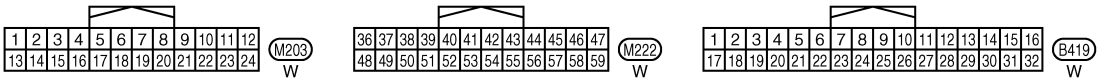




TKWT8265E

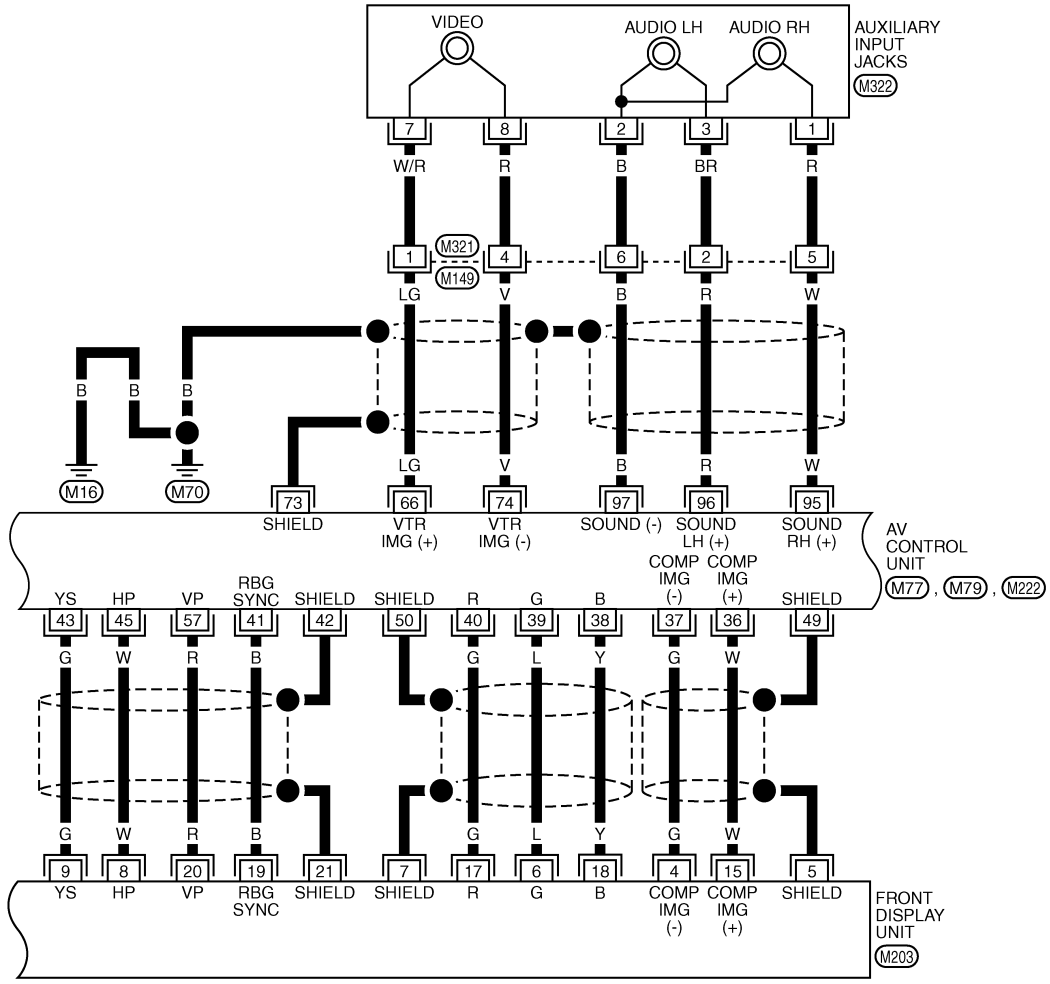
AV-AV-07

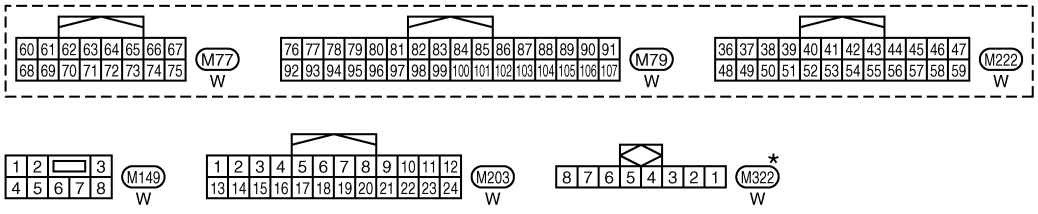




TKWT8266E

AV-AV-08

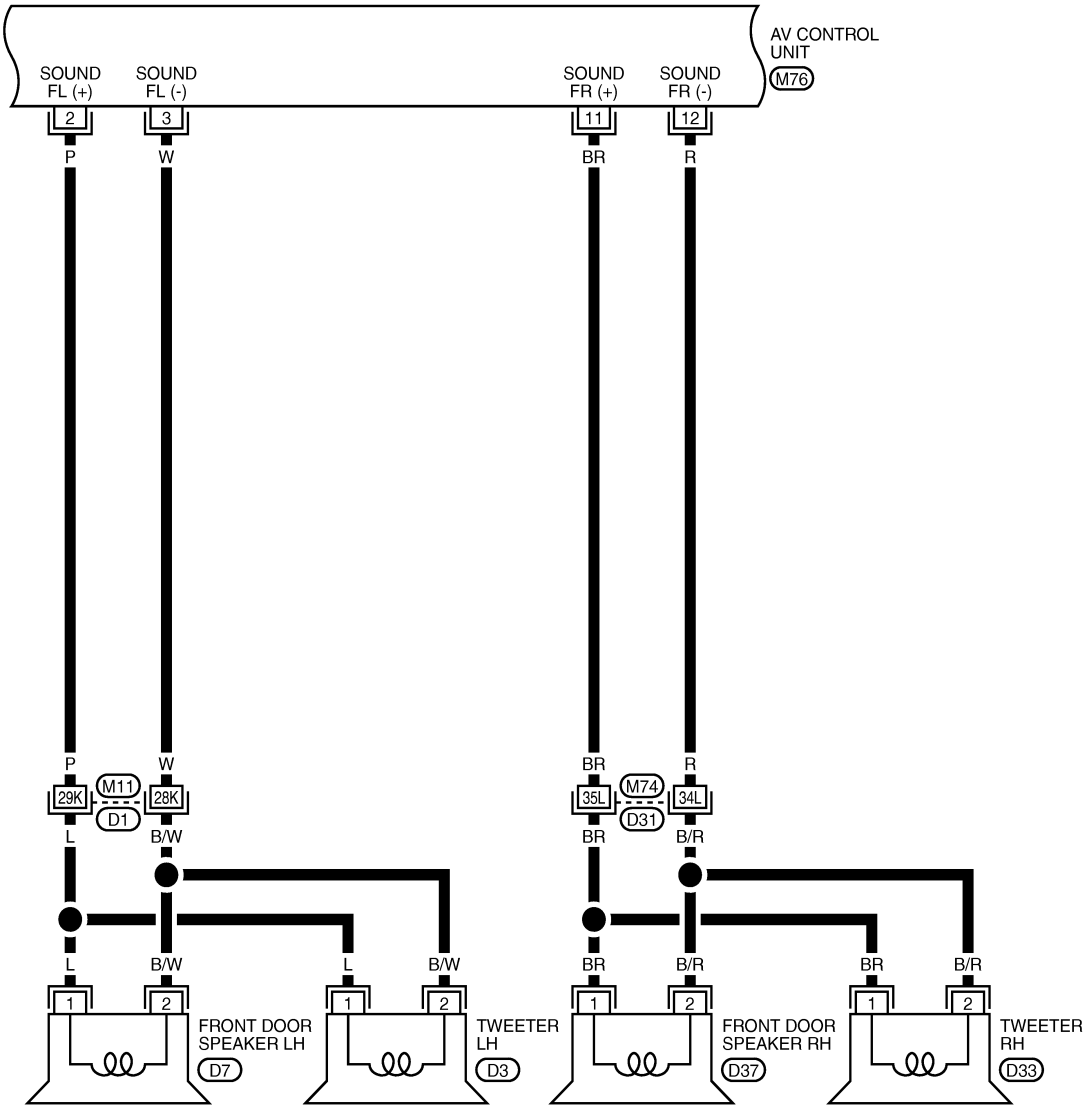


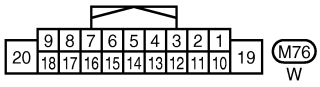


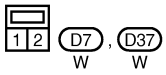
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8267E

AV-AV-09

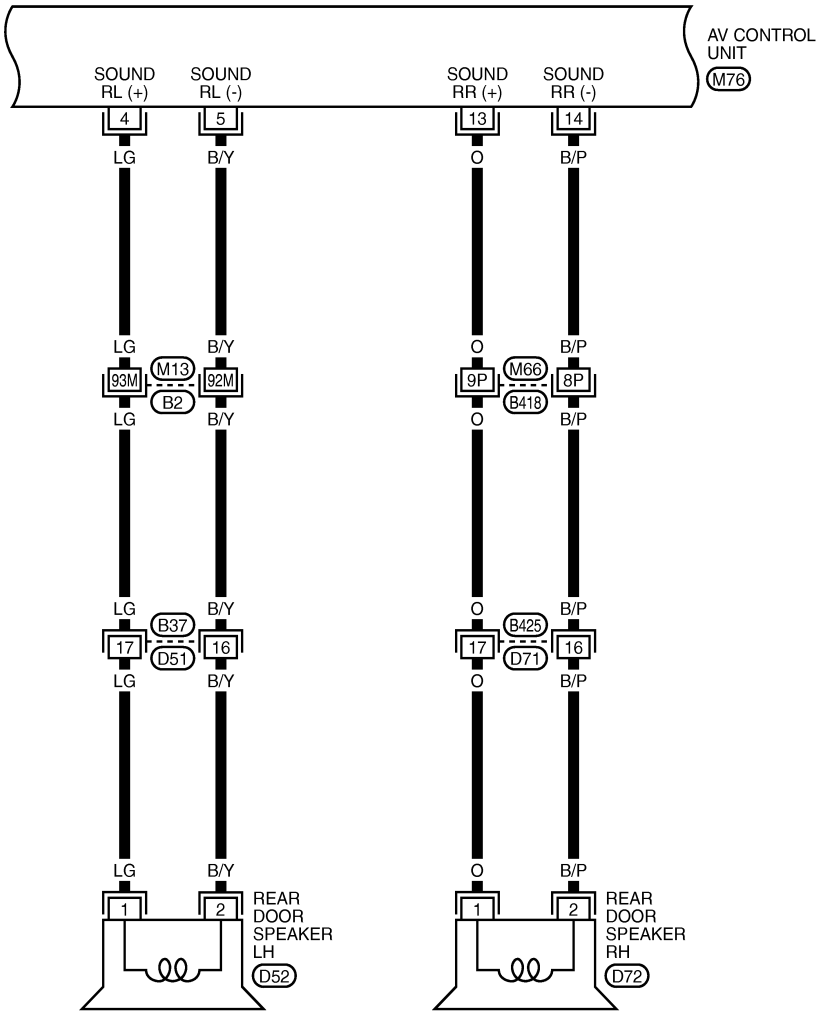


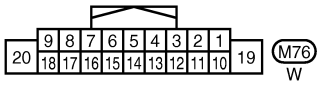


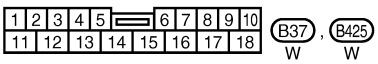


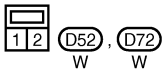
REFER TO THE FOLLOWING.
(D1) , (D31) -SUPER MULTIPLE JUNCTION (SMJ)

TKWT6681E





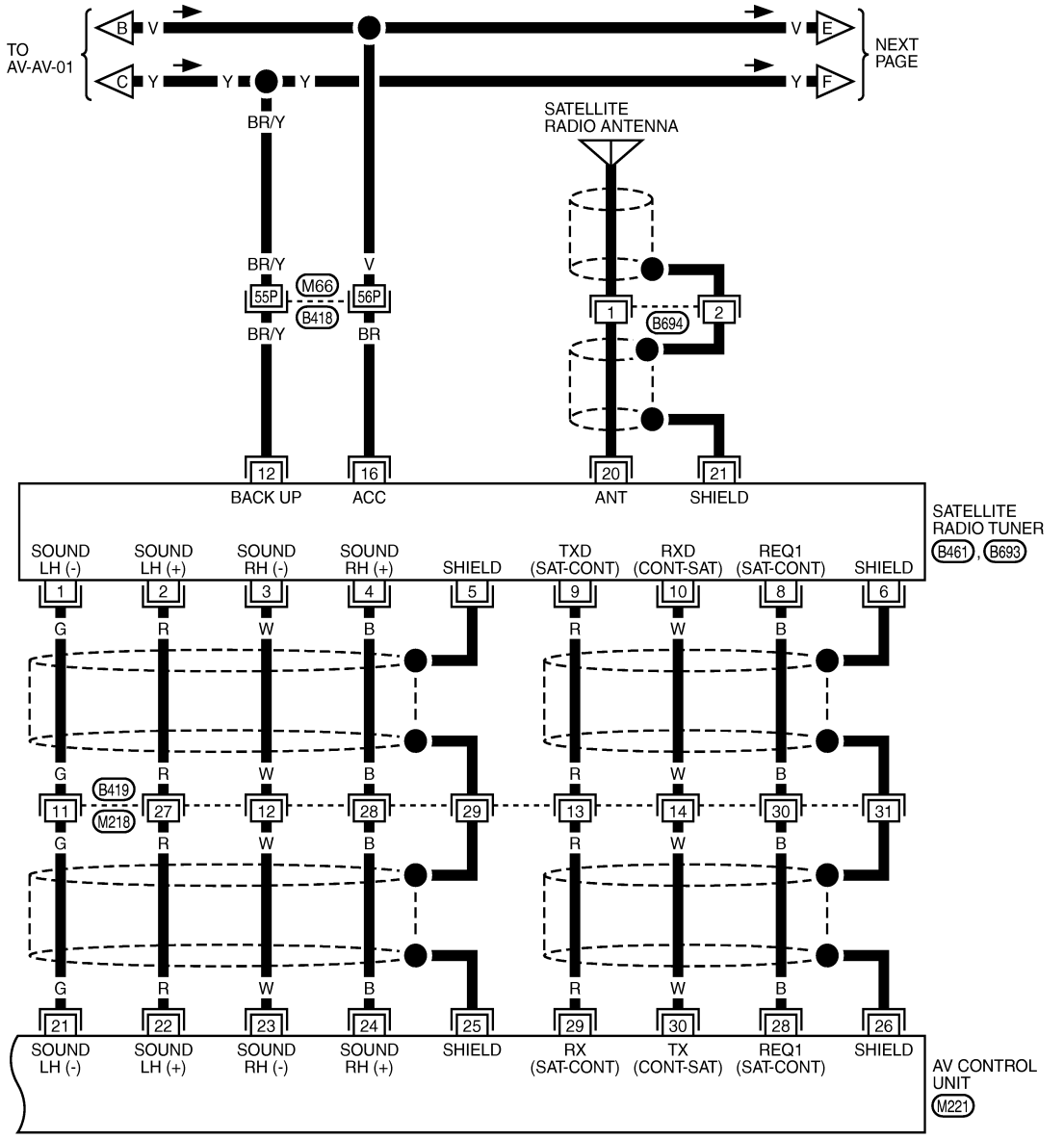


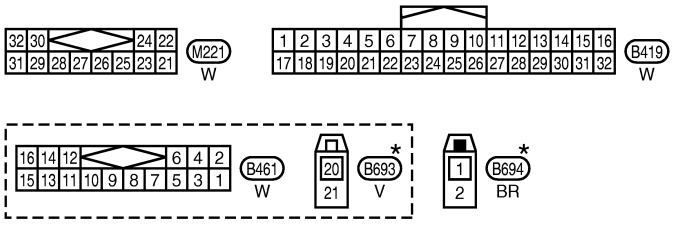


REFER TO THE FOLLOWING.
B2 , B418 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT6682E

AV-AV-11



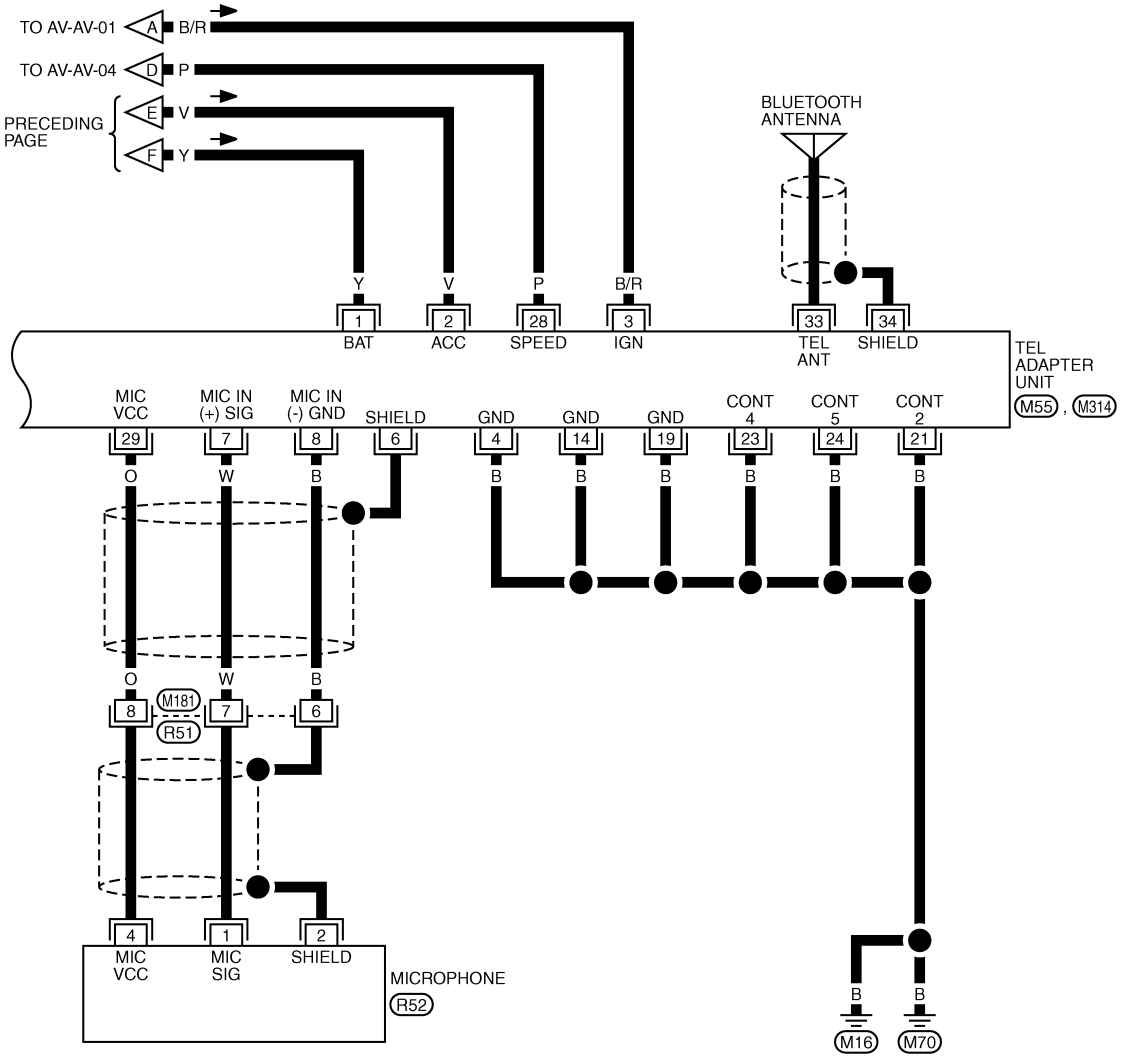


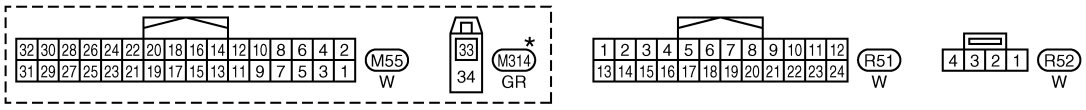
★ : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6683E

AV-AV-12





*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8268E

SYMPTOM DIAGNOSIS

MULTI AV SYSTEM SYMPTOMS WITHOUT NAVIGATION

WITHOUT NAVIGATION : Symptom Table

INFOID:0000000004155839

OPERATION

Symptoms	Check items	Possible malfunction location / Action to take
Multifunction switch and preset switch operation does not work.	• All switches cannot be operated. • “MULTI AV” is displayed on system selection screen when the CONSULT-III is started.	• Multifunction switch power supply and ground circuit. • AV communication circuit between AV control unit and multifunction switch. Perform CONSULT-III self-diagnosis. Refer to AV-55, "WITHOUT NAVIGATION : CONSULT-III Function (MULTI AV)".
	• All switches cannot be operated. • “MULTI AV” is not displayed on system selection screen when the CONSULT-III is started.	AV control unit power supply and ground circuit malfunction. Refer to AV-113, "AV CONTROL UNIT : Diagnosis Procedure".
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-diagnosis function. Refer to AV-48, "WITHOUT NAVIGATION : Diagnosis Description".

RELATED TO HANDS-FREE PHONE

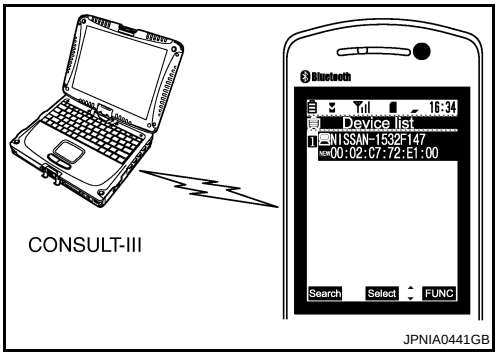
Basic Inspection

- Check that the cellular phone is corresponding type (Bluetooth™ correspond) when the hands-free related malfunction vehicle is in service before performing a diagnosis.
- There is a case that malfunction occurs due to the version change of the phone type, etc. even though it is a corresponding type. Therefore, confirm it by changing the cellular phone to another corresponding type phone, and check that it operates normally. It is necessary to distinguish whether the cause is the vehicle or cellular phone.

Simple check for Bluetooth™ communication

- If cellular phone and AV control unit cannot be connected with Bluetooth™ communication, following procedure allows the technician to judge which device has malfunction.

1. Turn on a cellular phone, not connecting Bluetooth™ communication.
2. Start CONSULT-III, then start Windows®.
3. Set CONSULT-III near a cellular phone.
4. When operated Bluetooth™ registration by cellular phone, check if CONSULT-III* would be displayed on the device name.
   (If other Bluetooth™ device is located near cellular phone, a name of the device would be displayed also.)
   NOTE:
   *:displayed Device Name Is “NISSAN-********”.



- If no device name is displayed, cellular phone is malfunctioning. Repair the cellular phone first, then perform diagnosis.
- If CONSULT-III is displayed on device name, cellular phone is normal. Perform diagnosis as per the following table.

On board self-diagnosis of hands-free phone system

Always perform the on board self-diagnosis at first after completing the basic inspection when the malfunction is detected on the hands-free phone system. Refer to AV-76, "Diagnosis Description".
Narrow down possible causes using the Diagnosis Chart if there is no malfunction in the on board self-diagnosis.

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection. (No connection is displayed on the front display at the guide.)	Repeat the registration of cellular phone.	TEL adapter unit malfunction. Refer to AV-508, "Exploded View".
Hands-free phone cannot be established.	Both the reception and the speech cannot be performed	• Perform CONSULT-III self-diagnosis. Refer to AV-55, "WITHOUT NAVIGATION : CONSULT-III Function (MULTI AV)". • No malfunction. TEL adapter unit malfunction. Refer to AV-508, "Exploded View".
The other party's voice cannot be heard by hands-free phone.	The operation of the "" switch can be performed.	TEL voice signal circuit malfunction between TEL adapter unit and AV control unit.
	The operation of the "" switch cannot be performed.	Control signal circuit. Refer to AV-144, "Diagnosis Procedure".
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	TEL adapter unit. Refer to AV-508, "Exploded View".
	Sound operation function does not work.	Microphone signal circuit. Refer to AV-140, "WITHOUT NAVIGATION : Diagnosis Procedure".

RELATED TO RGB IMAGE

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
RGB image is not shown.	There is malfunction in the CONSULT-III self-diagnosis result.	Perform CONSULT-III self-diagnosis. Refer to AV-55, "WITHOUT NAVIGATION : CONSULT-III Function (MULTI AV)".
	There is no malfunction in CONSULT-III self-diagnosis results.	• Front display unit power supply and ground circuit. Refer to AV-114, "FRONT DISPLAY UNIT : Diagnosis Procedure". • AV control unit power supply and ground circuit. Refer to AV-113, "AV CONTROL UNIT : Diagnosis Procedure".
Color of RGB image is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit. Refer to AV-122, "WITHOUT NAVIGATION : Diagnosis Procedure".
	Purple (Magenta) tint.	RGB signal (G: green) circuit. Refer to AV-124, "WITHOUT NAVIGATION : Diagnosis Procedure".
	Screen looks yellowish.	RGB signal (B: blue) circuit. Refer to AV-126, "WITHOUT NAVIGATION : Diagnosis Procedure".
RGB screen is rolling.	—	RGB synchronizing signal circuit. Refer to AV-128, "WITHOUT NAVIGATION : Diagnosis Procedure".
Fuel economy display is malfunctioning.	There is malfunction in the CONSULT-III self-diagnosis result.	Perform CONSULT-III self-diagnosis. Refer to AV-55, "WITHOUT NAVIGATION : CONSULT-III Function (MULTI AV)".
	There is no malfunction in CONSULT-III self-diagnosis results.	Ignition signal circuit malfunction. Refer to AV-113, "AV CONTROL UNIT : Diagnosis Procedure".

RELATED TO AUDIO

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
The CD cannot be removed.	Check the mechanical operation of eject switch.	Perform CONSULT-III self-diagnosis. When detecting no malfunction in those components, replace AV control unit.Refer to AV-482, "Exploded View".
Audio sound is not heard.	No sound from all speakers.	Perform CONSULT-III self-diagnosis. When detecting no malfunction in those components, replace AV control unit.Refer to AV-482, "Exploded View".
	There is no sound from one of speakers.	Sound signal circuits malfunction between AV control unit and speaker on the side where there is no sound.
Satellite radio is not received.	"ANTENNA" is not displayed even when the channel is turned to 0 in Satellite radio mode.	Perform the following inspection procedure. 1. Check satellite radio antenna mounting nut for looseness. **NOTE:** Tightening torque: 6.5 N·m (0.66 kg-m, 58 in-lb.) 2. Visually check for satellite radio antenna feeder. 3. Replace the satellite radio antenna. Refer to AV-507, "Exploded View". 4. Replace the satellite radio tuner. Refer to AV-506, "Exploded View".
	"ANTENNA" is displayed when the channel is turned to 0 in Satellite radio mode.	Perform the following inspection procedure. 1. Check the connection between Satellite radio tuner and antenna feeder. 2. Check the connection between Satellite radio antenna and antenna feeder. 3. Check Antenna feeder for open circuit. 4. Replace the satellite radio antenna. Refer to AV-507, "Exploded View". 5. Replace the satellite radio tuner. Refer to AV-506, "Exploded View".
The sound of Satellite radio is not heard.	Other audio sounds are normal.	Satellite radio sound signal circuit between AV control unit and satellite radio tuner.
It does not change to Satellite radio mode.	There is malfunction in the CONSULT-III self-diagnosis result.	Perform CONSULT-III self-diagnosis. Refer to AV-55, "WITHOUT NAVIGATION : CONSULT-III Function (MULTI AV)".
AM/FM radio is not received.	Other audio sounds are normal.	• Antenna amp. ON signal circuit. • Antenna feeder.

RELATED TO STEERING SWITCH

Trouble diagnosis chart by symptom

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch signal GND circuit. Refer to AV-154, "WITHOUT NAVIGATION : Diagnosis Procedure".
Only specified switch cannot be operated.	Steering switch. Refer to AV-495, "Exploded View".
"SOURCE", "MENU UP", "MENU DOWN"switches of steering switch are not operated.	Steering switch signal A circuit. Refer to AV-148, "WITHOUT NAVIGATION : Diagnosis Procedure".
"VOL UP", "VOL DOWN", "", "" switches of steering switch are not operated.	Steering switch signal B circuit. Refer to AV-151, "WITHOUT NAVIGATION : Diagnosis Procedure".

AUX

NOTE:

Check that there is no malfunction of AUX equipment main body before performing a diagnosis.

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	AUX sound signal circuits malfunction between auxiliary input jacks and AV control unit.
AUX Image is not displayed when AUX mode is selected. (Menu display is normal)	—	• AUX image signal circuit malfunction between auxiliary input jacks and AV control unit. Refer to AV-136, "WITHOUT NAVIGATION : Diagnosis Procedure". • RGB area (YS) signal circuit malfunction between AV control unit and front display unit. Refer toAV-130, "WITHOUT NAVIGATION : Diagnosis Procedure".
AUX Image is not displayed when AUX mode is selected. (Menu display is not displayed, too)	—	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-132, "WITHOUT NAVIGATION : Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and display unit. Refer to AV-134, "WITHOUT NAVIGATION : Diagnosis Procedure".
AUX Image is not rolling when AUX mode is selected.	—	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-132, "WITHOUT NAVIGATION : Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and display unit. Refer to AV-134, "WITHOUT NAVIGATION : Diagnosis Procedure".

WITH NAVIGATION

WITH NAVIGATION : Symptom Table

INFOID:0000000004155840

RELATED TO NAVIGATION

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
Multifunction switch and preset switch operation does not work.	• All switches cannot be operated. • “MULTI AV” is displayed on system selection screen when the CONSULT-III is started.	• Multifunction switch power supply and ground circuit. • AV communication circuit between AV control unit and multifunction switch. Perform CONSULT-III self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".
	• All switches cannot be operated. • “MULTI AV” is not displayed on system selection screen when the CONSULT-III is initialized.	AV control unit power supply and ground circuit malfunction. Refer to AV-113, "AV CONTROL UNIT : Diagnosis Procedure".
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-diagnosis function. Refer to AV-57, "WITH NAVIGATION : Diagnosis Description".
Fuel economy display, vehicle setting operation is abnormal.	There is malfunction in the CONSULT-III self-diagnosis result.	Perform detected DTC self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".
	There is no malfunction in the self-diagnosis results.	AV control unit Ignition signal circuit malfunction. Refer to AV-113, "AV CONTROL UNIT : Diagnosis Procedure".
Guide sound is not heard.	On the setting display select “system sound (guide sound volume, etc.),” and confirm that guide sound is ON.	AV control unit malfunction. Replace AV control unit. Refer to AV-482, "Exploded View".

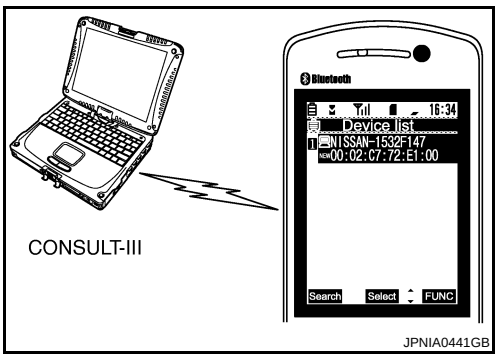
RELATED TO HANDS-FREE PHONE

- Check that the cellular phone is corresponding type (Bluetooth™ correspond) when the hands-free related malfunction vehicle is in service before performing a diagnosis.
- There is a case that malfunction occurs due to the version change of the phone type, etc. even though it is a corresponding type. Therefore, confirm it by changing the cellular phone to another corresponding type phone, and check that it operates normally. It is necessary to distinguish whether the cause is the vehicle or cellular phone.

Simple check for Bluetooth™ communication

If cellular phone and AV control unit cannot be connected with Bluetooth™ communication, following procedure allows the technician to judge which device has malfunction.

1. Turn on a cellular phone, not connecting Bluetooth™ communication.
2. Start CONSULT-III, then start Windows®.
3. Set CONSULT-III near a cellular phone.
4. When operated Bluetooth™ registration by cellular phone, check if CONSULT-III* would be displayed on the device name.
   (If other Bluetooth™ device is located near cellular phone, a name of the device would be displayed also.)
   NOTE:
   *:Displayed device name is “NISSAN-********”.



- If no device name is displayed, cellular phone is malfunctioning. Repair the cellular phone first, then perform diagnosis.
- If CONSULT-III is displayed on device name, cellular phone is normal. Perform diagnosis as per the following table.

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection. (no connection is displayed on the display at the guide.)	Repeat the registration of cellular phone.	AV control unit malfunction. Replace AV control unit. Refer to AV-482, "Exploded View".
Hands-free phone cannot be established.	• Hands-free phone operation can be made, but the communication cannot be established. • Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation.	AV control unit malfunction. Replace AV control unit. Refer to AV-482, "Exploded View".
The other party's voice cannot be heard by hands-free phone.	Check the “microphone speaker” in Inspection & Adjustment Mode if sound is heard.	AV control unit malfunction. Replace AV control unit. Refer to AV-482, "Exploded View".
	Check the “microphone speaker” in Inspection & Adjustment Mode if sound is not heard.	AV control unit malfunction. Replace AV control unit. Refer to AV-482, "Exploded View".
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	AV control unit malfunction. Replace AV control unit. Refer to AV-482, "Exploded View".
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-141, "WITH NAVIGATION : Diagnosis Procedure".

RELATED TO CAMERA

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
Camera image is not displayed (displayed in black and nothing can be displayed).	For front display unit, AUX and DVD image are not displayed.	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-132, "WITH NAVIGATION : Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-134, "WITH NAVIGATION : Diagnosis Procedure".
Camera image is not shown. (Vehicle width and possible route line is displayed.)	—	• Camera image signal circuit between camera control unit and rear view camera. Refer to AV-145, "Diagnosis Procedure". • Rear view camera ON signal circuit. Refer to AV-146, "Diagnosis Procedure".
Camera image is not displayed. (Only warning message under area is displayed.)	There is malfunction in the CONSULT-III self-diagnosis result.	Perform detected DTC self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".
	For front display unit, AUX and DVD image are normal.	Camera image signal circuit malfunction between camera control unit and front display unit. Refer to AV-147, "Diagnosis Procedure".
	For front display unit, AUX and DVD image are not displayed.	RGB area (YS) signal circuit malfunction between AV control unit and front display unit. Refer to AV-130, "WITH NAVIGATION : Diagnosis Procedure".
	Select “Camera Cont.” of Confirmation/ Adjustment mode, Reverse Sensor is not turned ON at “Connection Confirmation”.	Reverse signal circuit malfunction (camera control unit).
CAMERA image is rolling.	For front display unit, AUX and DVD image are also rolling.	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-132, "WITH NAVIGATION : Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-134, "WITH NAVIGATION : Diagnosis Procedure".
Camera image does not switch.	Malfunction of self-diagnosis result is indicated.	Camera-connection recognition signal circuit malfunction between AV control unit and camera control unit. Refer to AV-106, "Diagnosis Procedure".
	Malfunction of self-diagnosis result is not indicated.	Reverse signal circuit malfunction (AV control unit).
Possible route line is indicated abnormally when camera image is displayed.	There is malfunction in the CONSULT-III self-diagnosis result.	Perform detected DTC self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".

RELATED TO RGB IMAGE

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
RGB image is not shown.	• All RGB images are not shown. • “MULTI AV” is displayed on system selection screen when the CONSULT-III is started.	Perform CONSULT-III self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".
	• All RGB images are not shown. • “MULTI AV” is not displayed on system selection screen when the CONSULT-III is started.	AV control unit power supply and ground circuit malfunction. Refer to AV-113, "AV CONTROL UNIT : Diagnosis Procedure".

Symptoms	Check items	Possible malfunction location / Action to take
Color of RGB image is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit malfunction between AV control unit and front display unit. Refer to AV-122, "WITH NAVIGATION : Diagnosis Procedure".
	Purple (Magenta) tint.	RGB signal (G: green) circuit malfunction between AV control unit and front display unit. Refer to AV-124, "WITH NAVIGATION : Diagnosis Procedure".
	Screen looks yellowish.	RGB signal (B: blue) circuit malfunction between AV control unit and front display unit. Refer to AV-126, "WITH NAVIGATION : Diagnosis Procedure".
RGB screen is rolling.	Front display unit, AUX image are normal.	RGB synchronizing signal circuit malfunction between AV control unit and front display unit. Refer to AV-128, "WITH NAVIGATION : Diagnosis Procedure".

RELATED TO VOICE CONTROL

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
The voice cannot be controlled even if the voice control screen is displayed.	Voice sounds at “Voice Microphone Test” of Confirmation/Adjustment mode.	AV control unit malfunction. Replace AV control unit. Refer to AV-482, "Exploded View".
	Voice does not sound at “Voice Microphone Test” of Confirmation/Adjustment mode.	Microphone circuit malfunction. Refer to AV-141, "WITH NAVIGATION : Diagnosis Procedure".
The voice cannot be controlled (Voice control screen is not displayed).	Steering switch's “VOL DOWN”, “VOL UP”, “” switch works, but “”it does not work.	Steering switch malfunction. Replace steering switch. Refer to AV-495, "Exploded View".
	Steering switch's “VOL DOWN”, “VOL UP”, “”, “” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-152, "WITH NAVIGATION : Diagnosis Procedure".
	All steering switches do not work.	Steering switch signal GND circuit malfunction. Refer to AV-155, "WITH NAVIGATION : Diagnosis Procedure".

RELATED TO AUDIO

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
The CD cannot be removed.	Check the mechanical operation of eject switch.	Perform CONSULT-III self-diagnosis. When detecting no malfunction in those components, replace AV control unit. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".
Audio sound is not heard.	No sound from all speakers.	Perform CONSULT-III self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".
There is no sound from speaker on the right or left side.	—	Sound signal circuit malfunction between AV control unit and BOSE amp. at the side where there is no sound.
There is no sound from front door and tweeter on the right or left side.	—	Sound signal circuits malfunction between BOSE amp. and speaker on the side where there is no sound.
There is no sound from one of speakers.	—	Sound signal circuit malfunction between BOSE amp. and speaker on the side where there is no sound.

Symptoms	Check items	Possible malfunction location / Action to take
Audiopilot® does not work.	—	Audiopilot® Microphone circuits malfunction between BOSE amp. and Audiopilot® Microphone. • Without DVD player models Refer to AV-142, "BOSE AUDIO 2CH SYSTEM : Diagnosis Procedure". • With DVD player models Refer to AV-143, "BOSE SURROUND AUDIO 5.1CH SYSTEM : Diagnosis Procedure".
Satellite radio is not received.	There is malfunction in the CONSULT-III self-diagnosis result.	Perform CONSULT-III self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".
	There is no malfunction in the CONSULT-III self-diagnosis result.	Perform the following inspection procedure. 1. Check satellite radio antenna mounting nut for looseness. **NOTE:** Tightening torque: 6.5 N·m (0.66 kg-m, 58 in-lb) 2. Visually check for satellite radio antenna feeder. 3. Replace the satellite radio antenna. Refer to AV-482, "Exploded View". 4. Replace the AV control unit. Refer to AV-482, "Exploded View".
AM/FM radio is not received.	Other audio sounds are normal.	• Antenna amp. ON signal circuit. • Antenna feeder.

RELATED TO iPod®

Connect another iPod® and check if the symptom is reproduced or not. If the symptom is reproduced, diagnose the vehicle. If no malfunction is detected, replace the iPod harness.

NOTE:

It is unable to check that between iPod® and iPod harness.

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
The sound of iPod® is not heard.	Other audio sounds are normal.	• iPod sound signal circuit between AV control unit and iPod adapter. • iPod sound signal circuit between iPod® and iPod adapter.
It does not change to iPod mode.	There is malfunction in the CONSULT-III self-diagnosis.	Perform CONSULT-III self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".
"iPod is not connected" is displayed when it comes to iPod mode.	Connected to iPod®.	iPod connection recognition signal circuit between iPod® and iPod adapter.
iPod® cannot charge the battery.	—	iPod battery charge circuit between iPod® and iPod adapter.
The title of music file in the iPod® is not indicated.	—	Serial communication circuit between iPod® and iPod adapter.
Accessing the iPod® is unavailable from the vehicle.		

RELATED TO STEERING SWITCH

Trouble diagnosis chart by symptom

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch signal GND circuit malfunction. Refer to AV-155, "WITH NAVIGATION : Diagnosis Procedure".
Only specified switch (1) cannot be operated.	Steering switch malfunction. Refer to AV-495, "Exploded View".

Symptoms	Probable malfunction location
Steering switch's “SOURCE”, “MENU UP”, “MENU”, “DOWN”, “ENTER” switches do not work.	Steering switch signal A circuit malfunction. Refer to AV-149, "WITH NAVIGATION : Diagnosis Procedure".
Steering switch's “”, “VOL UP”, “VOL DOWN”, “” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-152, "WITH NAVIGATION : Diagnosis Procedure".

RELATED TO AUXILIARY INPUT

NOTE:

Check that there is no malfunction of AUX equipment main body before performing a diagnosis.

Without DVD player models

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
For front display unit, AUX image is not displayed (Menu display is normal).	Camera image is normal.	AUX image signal circuit malfunction between auxiliary input jacks and front display unit. Refer to AV-137, "WITH NAVIGATION : Diagnosis Procedure".
	Camera image is not displayed. (Only warning message under area is displayed.)	Perform CONSULT-III self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)". When detecting no malfunction in those components, the following items are a possible cause. RGB area (YS) signal circuit malfunction between AV control unit and front display unit. Refer to AV-130, "WITH NAVIGATION : Diagnosis Procedure".
For front display unit, AUX image is not displayed (Menu display is not displayed, too).	Camera image is not displayed (displayed in black and nothing can be displayed).	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-132, "WITH NAVIGATION : Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-134, "WITH NAVIGATION : Diagnosis Procedure".
For front display unit, AUX image is rolling.	Camera image is rolling.	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-132, "WITH NAVIGATION : Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-134, "WITH NAVIGATION : Diagnosis Procedure".
There is no AUX sound from speaker on the right or left side.	The sound other than AUX sound is normal.	AUX sound signal circuits malfunction between auxiliary input jacks and AV control unit.
It does not change to AUX mode.	There is malfunction in the CONSULT-III self-diagnosis result.	Perform CONSULT-III self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".

With DVD player models

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
For front display unit, AUX image is not displayed (Menu display is normal).	DVD image is normal.	AUX image signal circuit malfunction between auxiliary input jacks and DVD player. Refer to AV-137, "WITH NAVIGATION : Diagnosis Procedure".
	Also, DVD image is not displayed (Menu display is normal).	Perform CONSULT-III self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)". When detecting no malfunction in those components, the following items are a possible cause. • Composite image signal circuits malfunction between DVD player and front display unit. Refer to AV-139, "Diagnosis Procedure". • RGB area (YS) signal circuit malfunction between AV control unit and front display unit. Refer to AV-130, "WITH NAVIGATION : Diagnosis Procedure".
For front display unit, AUX image is not displayed (Menu display is not displayed, too).	Also, DVD image is not displayed (Also, menu display is not displayed).	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-132, "WITH NAVIGATION : Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-134, "WITH NAVIGATION : Diagnosis Procedure".
For front display unit, AUX image is rolling.	DVD image is rolling.	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-132, "WITH NAVIGATION : Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-134, "WITH NAVIGATION : Diagnosis Procedure".
There is no AUX sound.	—	Perform CONSULT-III self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".
There is no AUX sound from speaker on the right or left side.	The sound other than AUX sound is normal.	• AUX sound signal circuit malfunction between auxiliary input jacks and DVD player at the side where there is no sound. • AUX sound signal circuit malfunction between AV control unit and DVD player at the side where there is no sound.
It does not change to AUX mode.	There is malfunction in the CONSULT-III self-diagnosis result.	Perform CONSULT-III self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".

RELATED TO DVD MODE

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
For front display unit, DVD image is not displayed (Menu display is normal).	Also, AUX image is not displayed (Menu display is normal).	Perform CONSULT-III self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)". When detecting no malfunction in those components, the following items are a possible cause. • Composite image signal circuits malfunction between DVD player and front display unit. Refer to AV-139, "Diagnosis Procedure". • RGB area (YS) signal circuit malfunction between AV control unit and front display unit. Refer to AV-130, "WITH NAVIGATION : Diagnosis Procedure".
For front display unit, DVD image is not displayed (Also, menu display is not displayed).	Also, AUX image is not displayed (Also, menu display is not displayed).	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-132, "WITH NAVIGATION : Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-134, "WITH NAVIGATION : Diagnosis Procedure".
For front display, DVD image is rolling.	AUX image is rolling.	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-132, "WITH NAVIGATION : Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-134, "WITH NAVIGATION : Diagnosis Procedure".
There is no DVD sound.	—	Perform CONSULT-III self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".
There is no DVD sound from one of speakers.	Other audio sounds are normal.	Sound signal circuit malfunction between BOSE amp. and DVD player on the side where there is no sound.
It does not change to DVD mode.	There is malfunction in the CONSULT-III self-diagnosis result.	Perform CONSULT-III self-diagnosis. Refer to AV-72, "WITH NAVIGATION : CONSULT-III Function (MULTI AV)".

NORMAL OPERATING CONDITION
WITHOUT NAVIGATION

WITHOUT NAVIGATION : Description

INFOID:0000000004155841

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The system is in the video mode.	Push **<DISC>** to change the mode.
	The display is turned off.	Push **<Day/Night>** to turn on the display.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the multi AV system.

RELATED TO VOICE RECOGNITION

Related to telephone
The system should respond correctly to all voice commands without difficulty. If problems are encountered, try the following solutions.
Where the solutions are listed by number, try each solution in turn, starting with number 1, until the problem is resolves.

Symptom	Solution
System fails to interpret the command correctly.	1. Ensure that the command is valid.
	2. Ensure that the command is spoken after the tone.
	3. Speak clearly without pausing between words and at level appropriate to the ambient noise level in the vehicle.
	4. Ensure that the ambient noise level is not excessive (for example, windows open or defroster on). **NOTE:** If it is too noisy to use the phone, it is likely that the voice commands will be recognized.
	5. If more than one command was said at a time, try saying the commands separately.
	6. If the system consistently fails to recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker. See “Speaker adaptation (SA) mode” earlier in this section. Refer to “OWNER’S MANUAL”.
The system consistently selects the wrong voicetag	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the “List Names” command.
	2. Replace one of the names being confused with a new name.

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD/cassette, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and then determine the cause.

NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.

Symptom	Cause and Counter measure
Cannot play	Check if the CD was inserted correctly.
	Check if the CD is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than ".MP3", ".WMA", ".mp3", or ".wma" cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
	Check if the CD is protected by copyright.
Poor sound quality	Check if the CD is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.
Move immediately to the next song when playing	When a non-MP3/WMA file has been given an extension of ".MP3", ".WMA", ".mp3", or ".wma", or when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.

Noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources, is not a malfunction.

NOTE:

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

WITH NAVIGATION

WITH NAVIGATION : Description

INFOID:0000000004155842

NOTE:
For Navigation system operation information, refer to Navigation system Owner's Manual.

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The systems in the video mode.	Push **<DISC-AUX>** to change the mode.
	The display is turned off.	Push **<Day/Night>** to turn on the display.
No voice guidance is available. Or The volume is too high or too low.	The volume is not set correctly, or it is turned off.	Adjust the volume of voice guidance.
	Voice guidance is not provided for certain streets (roads displayed in gray).	This is not a malfunction.
No map is displayed on the screen.	A screen other than map screen is displayed.	Push **<MAP>**.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.

Symptom	Possible cause	Possible solution
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the navigation system.

NOTE:
Locations stored in the Address Book and other memory functions may be lost if the vehicle's battery is disconnected or becomes discharged. If this occurs, service the vehicle's battery as necessary and re-enter the information in the Address Book.

RELATED TO VOICE RECOGNITION

Related to basic operation

Symptom	Possible cause	Possible solution
The system does not recognize your command. or The system recognizes your command incorrectly	The interior of the vehicle is too noisy.	Close the windows or have other occupants quiet.
	The volume of your voice is too low.	Speak louder.
	The volume if your voice is too loud.	Speak softer.
	Your pronunciation is unclear.	Speak clearly.
	You are speaking before the voice recognition is ready	Push and release "" switch on the steering switch, and speak a command after the tone sounds.
	8 seconds or more have passed after you pushed and released "" switch on the steering switch.	Make sure to speak a command within 8 seconds after you push and release "" switch on the steering switch.
	Only a limited range of voice commands is usable for each screen.	Use a correct voice command appropriate for the current screen.
	The fan of the air conditioner is too loud.	If the air conditioner is set to "Auto", the fan speed is automatically lowered and voice commands can be recognized more easily. Lower the fan speed as necessary or set the air conditioner to "Auto".

Related to item choice
The system should respond correctly to all voice commands without difficulty. If problems are encountered, follow the solutions given in this guide for the appropriate error.
Where the solutions are listed by number, try each solution in turn, starting with number one, until the problem is resolved.

Symptom/ error message	Solution
Displays "COMMAND NOT RECOGNIZED" or the system fails to interpret the command correctly.	1. Ensure that the command format is valid.
	2. Speak clearly without pausing between words and at a level appropriate to the ambient noise level.
	3. Ensure that the ambient noise level is not excessive, for example, windows open or defrost on. **NOTE:** If it is too noisy to use the phone, it is likely that voice commands will not be recognized.
	4. If optional words of the command have been omitted, then command should be tried with these in place.
The system consistently selects the wrong voicetag	1. Ensure that the voicetag requested matches what was originally stored. This can be confirmed by giving the "Addressbook" Directory or Phone Directory command.
	2. Replace one of the voicetags being confused with a different voicetag.

Related to telephone
The system should respond correctly to all voice commands without difficulty. If problems are encountered, try the following solutions.

Where the solutions are listed by number, try each solution in turn, starting with number 1, until the problem is resolved.

Symptom	Solution
System fails to interpret the command correctly.	1. Ensure that the command is valid.
	2. Ensure that the command is spoken after the tone.
	3. Speak clearly without pausing between words and at level appropriate to the ambient noise level in the vehicle.
	4. Ensure that the ambient noise level is not excessive (for example, windows open or defroster on). **NOTE:** If it is too noisy to use the phone, it is likely that the voice commands will not be recognized.
	5. If more than one command was said at a time, try saying the commands separately.
	6. If the system consistently fails to recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker. See “Speaker adaptation (SA) mode” earlier in this section. Refer to “OWNER’S MANUAL”.
The system consistently selects the wrong voicetag	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the “List Names” command.
	2. Replace one of the names being confused with a new name.

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD/cassette, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and then determine the cause.

NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.

Symptom	Cause and Counter measure
Cannot play	Check if the CD/CF was inserted correctly.
	Check if the CD/CF is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than “.MP3”, “.WMA”, “.mp3”, or “.wma” cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
	Check if the CD/CF is protected by copyright.
Poor sound quality	Check if the CD/CF is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA CD/CF, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.

Symptom	Cause and Counter measure
Move immediately to the next song when playing	When a non-MP3/WMA file has been given an extension of ".MP3", ".WMA", ".mp3", or ".wma", or when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.

Noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources, is not a malfunction.

NOTE:

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

RELATED TO VEHICLE ICON

Symptom	Possible cause	Possible solution
Names of roads differ between Plan View and Birdview™.	This is because the quantity of the displayed information is reduced so that the screen does not become too crowded. There is also a chance that names of the roads may be displayed multiple times, and the names appearing on the screen may be different because of a processing procedure.	This is not a malfunction.
The vehicle icon is not displayed in the correct position.	The vehicle was transported after the ignition switch was pushed off, for example, by a ferry or car transporter.	Drive the vehicle for a while on a road where GPS signals can be received.
	The position and direction of the vehicle icon may be incorrect depending on the driving environments and the levels of positioning accuracy of the navigation system.	This is not a malfunction. Drive the vehicle for a while to automatically correct the position and direction of the vehicle icon.
When the vehicle is traveling on a new road, the vehicle icon is located on another road nearby.	Because the new road is not stored in the map data, the system automatically places the vehicle icon on the nearest road available.	Updated road information will be included in the next version of the map data.
The screen does not switch to the night screen even after turning on the headlights.	The daytime screen was set the last time the headlights were turned on.	Set the screen to the night screen mode using <Day/Night> when you turn on the headlights.
The map does not scroll even when the vehicle is moving.	The current location map screen is not displayed.	Push **<MAP>**.
The vehicle icon is not displayed.	The current location map screen is not displayed.	Push **<MAP>**.
The location of the vehicle icon is misaligned from the actual position.	When using tire chains or replacing the tires, speed calculations based on the speed sensor may be incorrect.	Drive the vehicle for a while (at approximately 19 MPH for about 30 minutes) to automatically correct the vehicle icon position. If this does not correct the vehicle icon position, contact an INFINITI dealer.
	The map data has a mistake or is incomplete (the vehicle icon position is always misaligned in the same area).	Updated road information will be included in the next version of the map data.

RELATED TO ROUTE CALCULATION AND VISUAL GUIDANCE

Symptom	Possible cause	Possible solution
Waypoints are not included in the auto reroute calculation.	Waypoints that you have already passed are not included in the auto reroute calculation.	If you want to go to that waypoint again, you need to edit the route.

Symptom	Possible cause	Possible solution
Route information is not displayed.	Route calculation has not yet been performed.	Set the destination and perform route calculation.
	You are not driving on the suggested route.	Drive on the suggested route.
	Route guidance is set to off.	Turn on route guidance.
	Route information is not provided for certain types of roads (roads displayed in gray).	This is not a malfunction.
The auto reroute calculation (or detour calculation) suggests the same route as the one previously suggested.	Route calculations took priority conditions into consideration, but the same route was calculated.	This is not a malfunction.
A waypoint cannot be added.	Five waypoints are already set on the route, including ones that you have already passed.	A maximum of 5 waypoints can be set on the route. If you want to go to 6 or more waypoints, perform route calculations multiple times as necessary.
The suggested route is not displayed.	Roads near the destination cannot be calculated.	Reset the destination to a main or ordinary road, and recalculate the route.
	The starting point and destination are too close.	Set a more distant destination.
	The starting point and destination are too far away.	Divide your trip by selecting one or two intermediate destinations, and perform route calculations multiple times.
	There are time restricted roads (by the day of the week, by time) near the current vehicle location or destination.	Set [Use Time Restricted Roads] to off.
The part of the route that you have already passed is deleted.	A route is managed by sections between waypoints. If you passed the first waypoint, the section between the starting point and the waypoint is deleted. (It may not be deleted depending on the area.)	This is not a malfunction.
An indirect route is suggested.	If there are restrictions (such as one-way streets) on roads close to the starting point or destination, the system may suggest an indirect route.	Adjust the location of the starting of the starting point or destination.
	The system may suggest an indirect route because route calculation does not take into consideration some areas such as narrow streets (gray roads.)	Reset the destination to a main or ordinary road, and recalculate the route.
The landmark information does not correspond to the actual information.	This may be caused by insufficient or incorrect map data.	Updated information will be included in the next version of the data.
The suggested route does not exactly connect to the starting point, waypoints, or destination.	There is no data for route calculation closes to these locations.	Set the starting point, waypoints and destination on a main road, and perform route calculation.

RELATED TO VOICE GUIDANCE

Symptom	Possible cause	Possible solution
Voice guidance is not available	Voice guidance is only available at certain intersections marked with? In some case, voice guidance is not available even when the vehicle should make a turn.	This is not a malfunction.
	The vehicle has deviated from the suggested route.	Go back to the suggested route or request route calculation again
	Voice guide is set to off.	Turn on voice guidance.
	Route guidance is set to off.	Turn on voice guidance.
The guidance contact does not correspond to the actual condition.	The contact of voice guidance may vary, depending on the types of intersections at which turn are made.	Follow all traffic rules and regulations.

RELATED TO TRAFFIC INFORMATION

Symptom	Possible cause	Possible solution
The traffic information is not displayed	The traffic information is not set to on.	Set the traffic information to on.
	You are in an area where traffic information is not available	Scroll to an area where traffic information is available
	You have not subscribed to XM NavTraffic or, your subscription to XM NavTraffic has expired.	Check your subscription status of XM NavTraffic.
	The map scale is set at a level where the display of icons is impossible.	Check that the map scale is set at a level in which the display of icons is possible.
With the automatic detour route search ON, no detour route is set to avoid congested areas.	There is no faster route compared to the current route, based on the road network and traffic information.	The automatic detour search is not intended for avoiding traffic jams. It searches for the fastest route taking into consideration such things as traffic jams.
The route does not avoid road section with traffic information stating it is closed due to road construction.	The navigation system is designed not to avoid this event because the actual period of closure may differ from the declared roadwork period.	Observe the actual road condition and follow the instructions on road for detour when necessary. If the road closure is for certain, use detour function and set the detour distance to avoid the closed road section.
Traffic information displayed differs from information from other media (e.g. radio).	Other media may use different information sources.	Observe the actual road conditions and regulations. Always observe safe driving practices and follow all traffic regulations.

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000005213739

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the “SUPPLEMENTAL RESTRAINT SYSTEM” and “SEAT BELTS” of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the “SUPPLEMENTAL RESTRAINT SYSTEM”.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precaution for SRS "AIR BAG" and "SEAT BELT PRE-TENSIONER" Service

INFOID:0000000004155844

- Do not use electrical test equipment to check SRS circuits unless instructed to in this Service Manual.
- Before servicing the SRS, turn ignition switch OFF, disconnect both battery cables and wait at least 3 minutes.
  For approximately 3 minutes after the cables are removed, it is still possible for the air bag and seat belt pretensioner to deploy. Therefore, do not work on any SRS connectors or wires until at least 3 minutes have passed.
- Diagnosis sensor unit must always be installed with their arrow marks “⇐” pointing towards the front of the vehicle for proper operation. Also check diagnosis sensor unit for cracks, deformities or rust before installation and replace as required.
- The spiral cable must be aligned with the neutral position since its rotations are limited. Do not turn steering wheel and column after removal of steering gear.
- Handle air bag module carefully. Always place driver and front passenger air bag modules with the pad side facing upward and seat mounted front side air bag module standing with the stud bolt side facing down.
- Conduct self-diagnosis to check entire SRS for proper function after replacing any components.
- After air bag inflates, the front instrument panel assembly should be replaced if damaged.
- Always replace instrument panel pad following front passenger air bag deployment.

Precaution for Trouble Diagnosis

INFOID:0000000004155845

AV COMMUNICATION SYSTEM

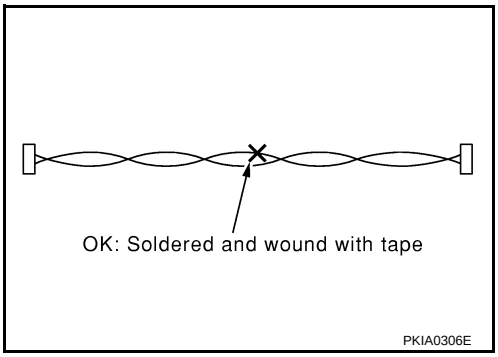
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

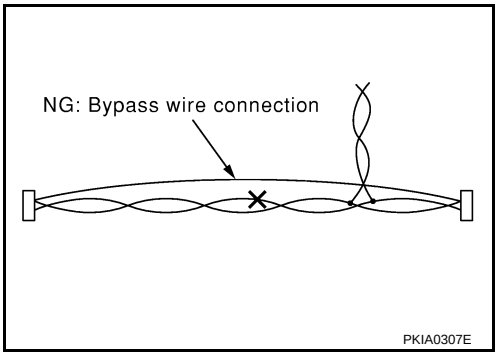
INFOID:0000000004155846

AV COMMUNICATION SYSTEM

- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]



- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)

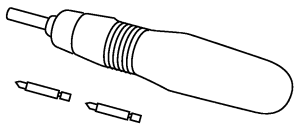


PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000004155847

Tool name	Description
Power tool  PBIC0191E	Loosening screws

ON-VEHICLE REPAIR

AV CONTROL UNIT

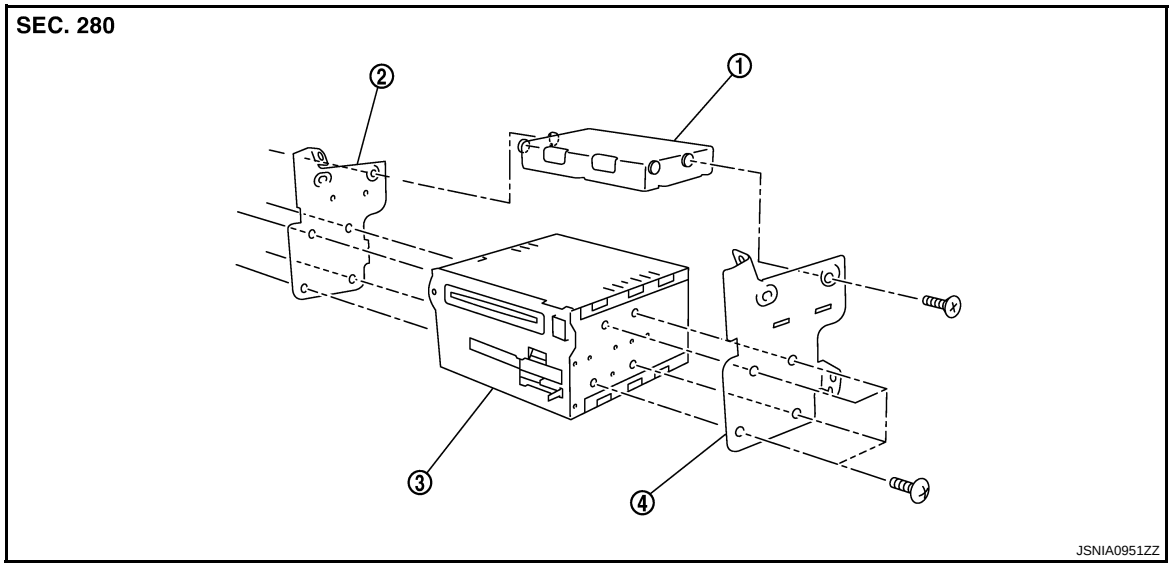
Exploded View

INFOID:0000000004155848

REMOVAL

Refer to IP-12, "INSTRUMENT PANEL : Component Parts Location".

DISASSEMBLY



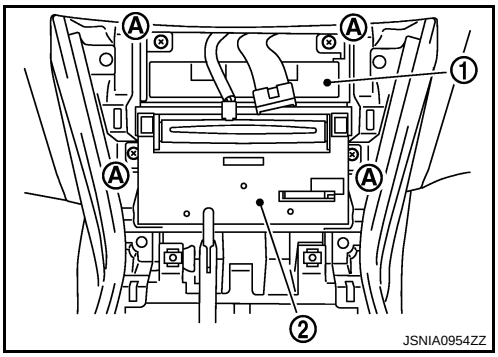
1. Unified meter and A/C amp.
2. Bracket LH
3. AV control unit
4. Bracket RH

Removal and Installation

INFOID:0000000004155849

REMOVAL

1. Remove cluster lid C. Refer to IP-19, "CLUSTER LID C : Removal and Installation".
2. Remove screws (A) and remove AV control unit (2) in conjunction with unified meter and A/C amp. (1).
3. Remove bracket screws, and then remove AV control unit.



INSTALLATION

Install in the reverse order of removal.

CAUTION:

Unified meter and A/C amp. screws are different from other securing screws. Never confuse them when installing.

FRONT DISPLAY UNIT

Exploded View

INFOID:0000000004155850

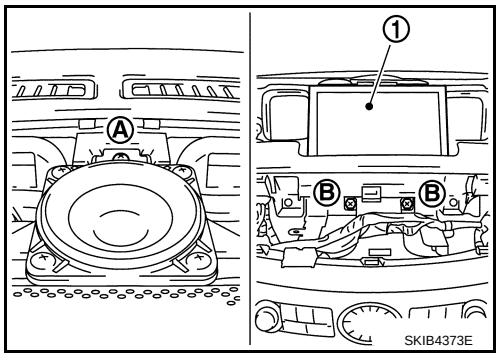
Refer to IP-12, "INSTRUMENT PANEL : Component Parts Location".

Removal and Installation

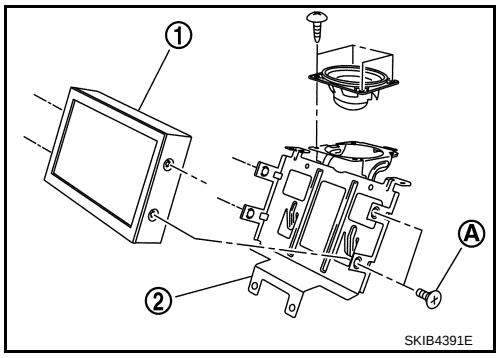
INFOID:0000000004155851

REMOVAL

1. Remove center ventilator grille. Refer to IP-12, "INSTRUMENT PANEL : Component Parts Location".
2. Remove multifunction switch. Refer to AV-493, "Removal and Installation".
3. Remove screw (A).
4. Remove screws (B) and disconnect connector, and remove display (1) center speaker comes off accordingly.



5. Remove screws (A) separate front display unit (1) from bracket (2).



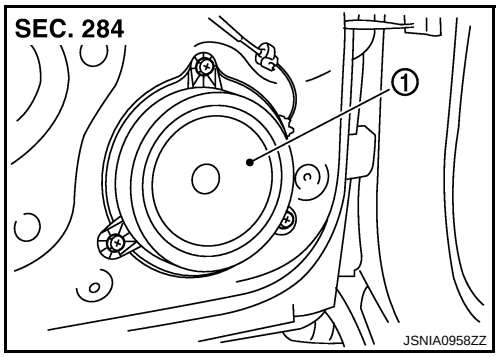
INSTALLATION

Install in the reverse order of removal.

FRONT DOOR SPEAKER

Exploded View

INFOID:0000000004155852



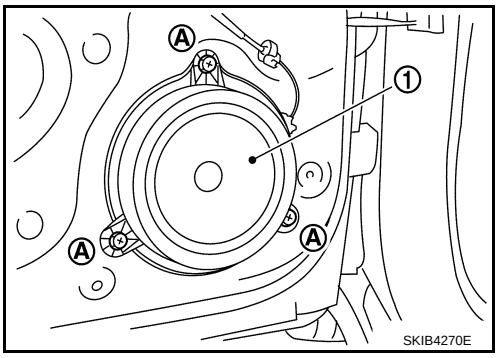
1. Front door speaker

Removal and Installation

INFOID:0000000004155853

REMOVAL

1. Remove front door finisher. Refer to EI-46, "Removal and Installation".
2. Remove screws (A) and remove front door speaker (1).



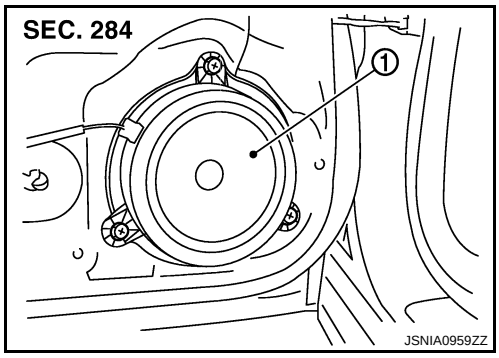
INSTALLATION

Install in the reverse order of removal.

REAR DOOR SPEAKER

Exploded View

INFOID:0000000004155854



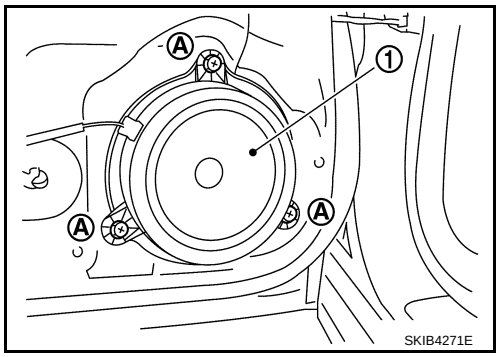
1. Rear door speaker

Removal and Installation

INFOID:0000000004155855

REMOVAL

1. Remove rear door finisher. Refer to EI-46, "Removal and Installation".
2. Remove screws (A) and remove rear door speaker (1).



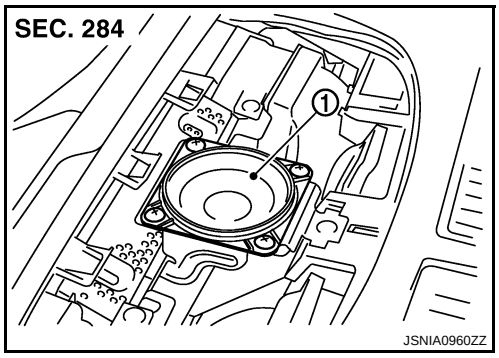
INSTALLATION

Install in the reverse order of removal.

CENTER SPEAKER

Exploded View

INFOID:0000000004155856



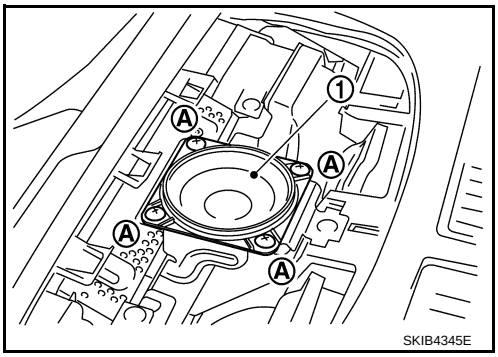
1. Center speaker

Removal and Installation

INFOID:0000000004155857

REMOVAL

1. Remove upper ventilator grill. Refer to IP-12, "INSTRUMENT PANEL : Component Parts Location".
2. Remove screws (A) and disconnect connector.
3. Remove center speaker (1).



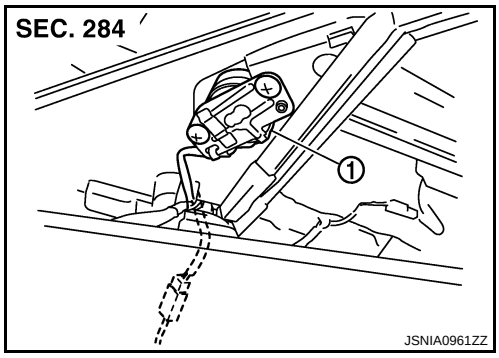
INSTALLATION

Install in the reverse order of removal.

TWEETER

Exploded View

INFOID:0000000004155858



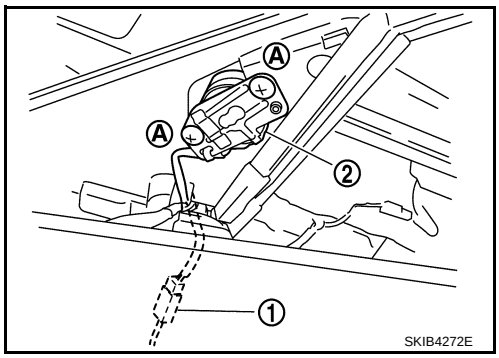
1. Tweeter

Removal and Installation

INFOID:0000000004155859

REMOVAL

1. Remove front door finisher. Refer to EI-46, "Removal and Installation".
2. Remove door sash inner cover (front). Refer to EI-46, "Component Parts Location".
3. Remove screws (A), and disconnect connector (1).
4. Remove tweeter (2).



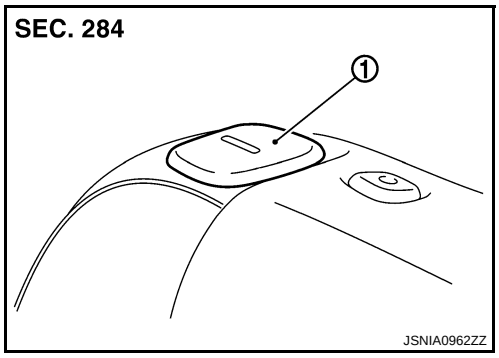
INSTALLATION

Install in the reverse order of removal.

SEAT SPEAKER

Exploded View

INFOID:0000000004155860



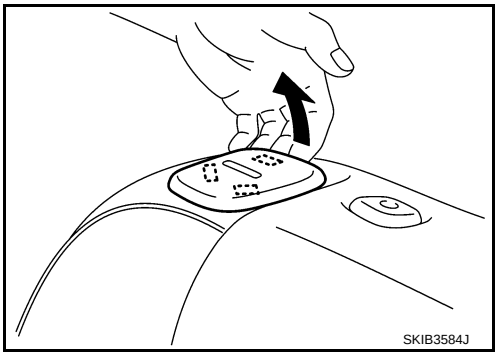
1. Seat speaker

Removal and Installation

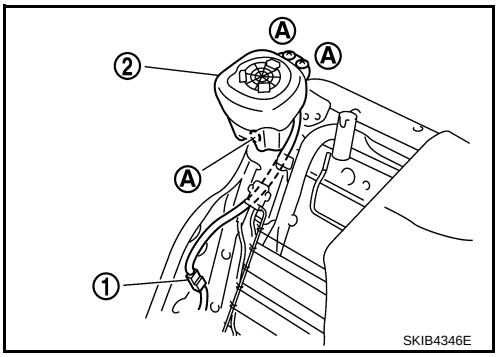
INFOID:0000000004155861

REMOVAL

1. Remove seat speaker grill as shown in the figure.
   CAUTION:
   Never reuse seat speaker grill. The pawl is broken when removing.



2. Remove front seat back trim and pad. Refer to SE-147, "Removal and Installation".
3. Remove screws (A) and disconnect connector (1).
4. Remove seat speaker (2).



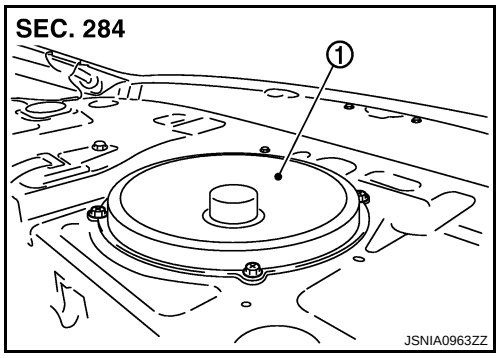
INSTALLATION

Install in the reverse order of removal.

WOOFER

Exploded View

INFOID:0000000004155862



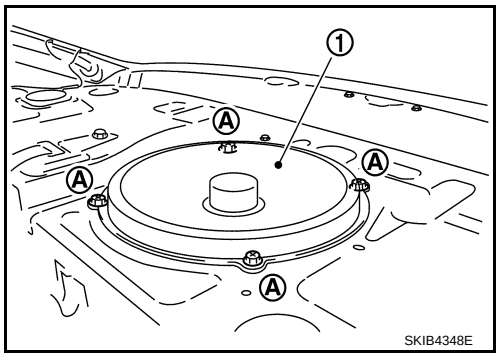
1. Woofer

Removal and Installation

INFOID:0000000004155863

REMOVAL

1. Remove rear parcel shelf finisher. Refer to EI-53, "Removal and Installation".
2. Remove screws (A) and disconnect connector.
3. Remove rear woofer (1) from rear parcel shelf.



INSTALLATION

Install in the reverse order of removal.

REAR SURROUND SPEAKER

Removal and Installation

INFOID:0000000004155864

REMOVAL

1. Remove rear parcel shelf finisher. Refer to EI-53, "Removal and Installation".
2. Remove rear surround speaker from rear parcel shelf.

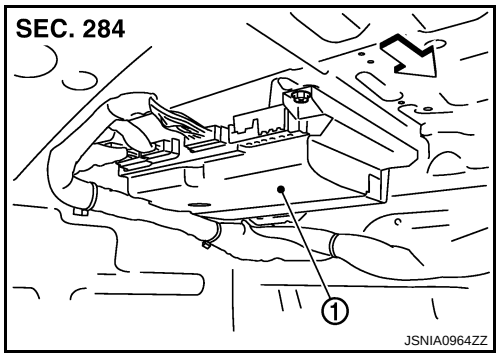
INSTALLATION

Install in the reverse order of removal.

BOSE AMP.

Exploded View

INFOID:0000000004155865



⇦: Vehicle front
1. BOSE amp.

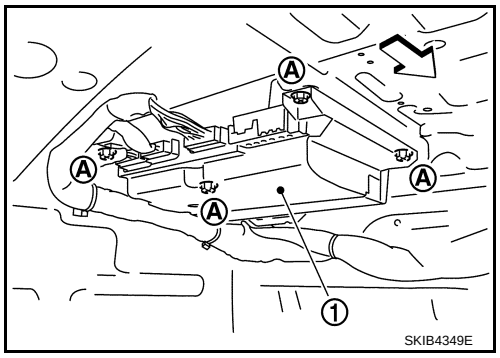
Removal and Installation

INFOID:0000000004155866

REMOVAL

1. Remove trunk front finisher. Refer to EI-66, "Component Parts Location".
2. Remove screws (A), and disconnect connector.
3. Remove BOSE amp. (1).

⇦: Vehicle front



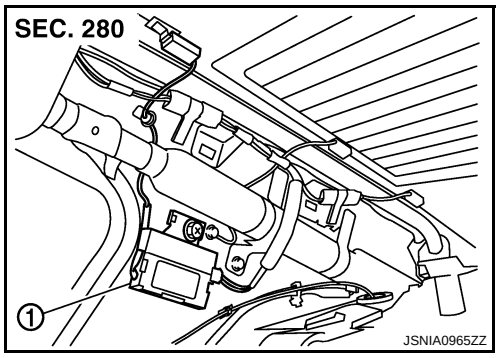
INSTALLATION

Install in the reverse order of removal.

ANTENNA AMP.

Exploded View

INFOID:0000000004155867



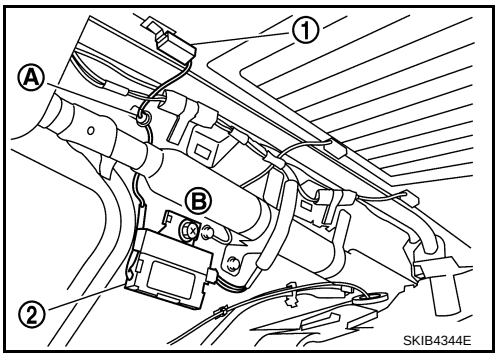
1. Antenna amp.

Removal and Installation

INFOID:0000000004155868

REMOVAL

1. Remove back pillar garnish RH. Refer to EI-49, "Component Parts Location".
2. Disengaged the clip (A) to separate glass terminal (1).
3. Remove screw (B) and remove antenna amp. (2) from vehicle.



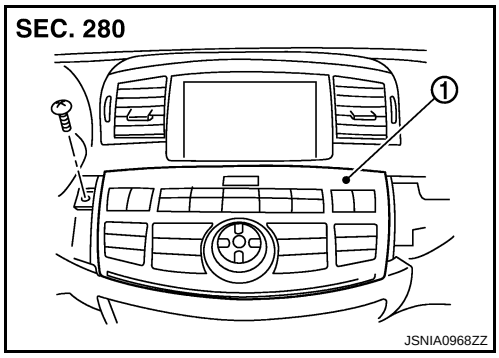
INSTALLATION

Install in the reverse order of removal.

MULTIFUNCTION SWITCH

Exploded View

INFOID:0000000004155869



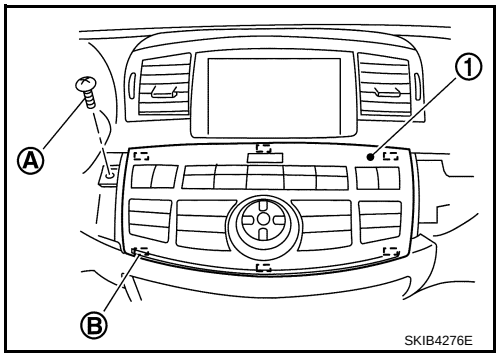
1. Multifunction switch

Removal and Installation

INFOID:0000000004155870

REMOVAL

1. Remove instrument panel finisher B and C. Refer to IP-12, "INSTRUMENT PANEL : Component Parts Location".
2. Remove screw (A).
3. Disengage tabs (B) and connector to separate multifunction switch (1) from instrument panel.



INSTALLATION

Install in the reverse order of removal.

PRESET SWITCH

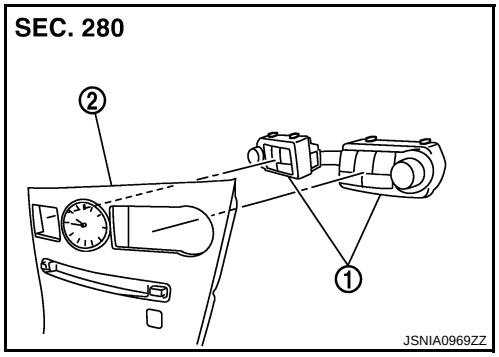
Exploded View

INFOID:0000000004155871

REMOVAL

Refer to IP-19, "CLUSTER LID C : Component Parts Location".

DISASSEMBLY



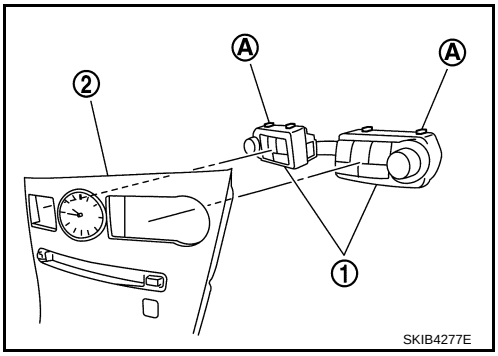
1. Preset switch
2. Cluster lid C

Removal and Installation

INFOID:0000000004155872

REMOVAL

1. Remove cluster lid C. Refer to IP-19, "CLUSTER LID C : Removal and Installation".
2. Disengage tabs (A) to separate preset switch (1) from cluster lid C (2).



INSTALLATION

Install in the reverse order of removal.

NOTE:

When installing preset switch, do not allow the print wire that connects preset switch and multifunction switch to get caught in between AV control unit and preset switch.

STEERING SWITCH

Exploded View

INFOID:0000000004155873

Refer to PS-10, "Removal and Installation".

Removal and Installation

INFOID:0000000004155874

REMOVAL

Refer to PS-10, "Removal and Installation".

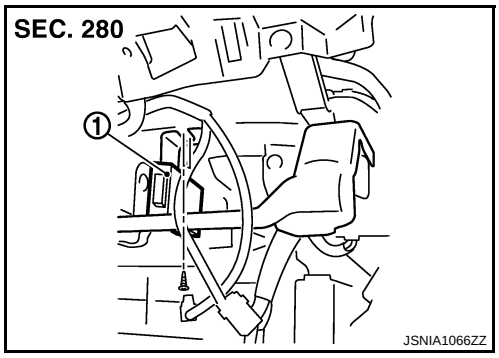
INSTALLATION

Install in the reverse order of removal.

IPOD ADAPTER

Exploded View

INFOID:0000000004155875



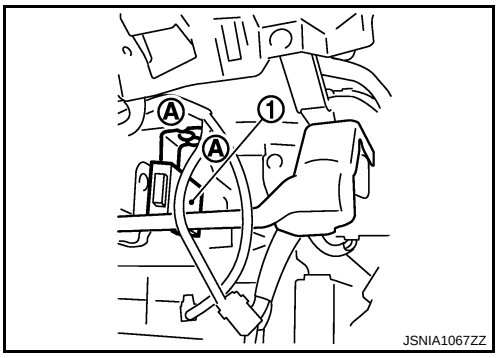
1. iPod adapter

Removal and Installation

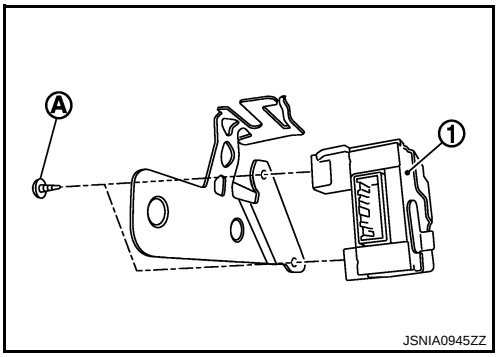
INFOID:0000000004155876

REMOVAL

1. Remove glove box cover. Refer to IP-20, "GLOVE BOX : Removal and Installation".
2. Remove screws (A) and remove iPod adapter bracket and iPod adapter (1).



3. Remove screws (A) and remove iPod adapter (1) from iPod adapter bracket.



INSTALLATION

Install in the reverse order of removal.

IPOD CONNECTOR

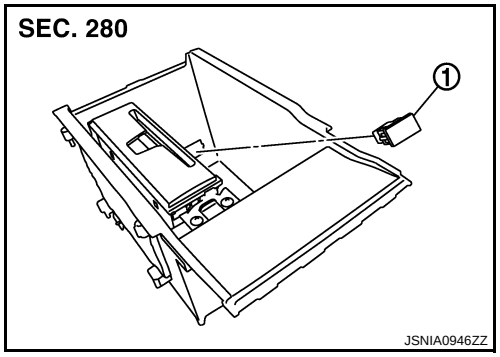
Exploded View

INFOID:0000000004155877

REMOVAL

Refer to IP-22, "CENTER CONSOLE : Component Parts Location".

DISASSEMBLY



1. iPod connector

Removal and Installation

INFOID:0000000004155878

REMOVAL

1. Remove center console. Refer to IP-22, "CENTER CONSOLE : Component Parts Location".
2. Push the pawl from the back of center console to remove iPod connector.

INSTALLATION

Install in the reverse order of removal.

DVD PLAYER

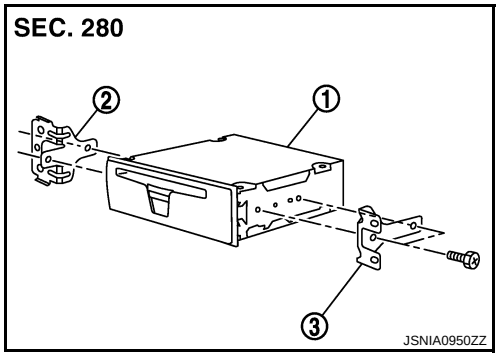
Exploded View

INFOID:0000000004155879

REMOVAL

Refer to IP-22, "CENTER CONSOLE : Component Parts Location".

DISASSEMBLY



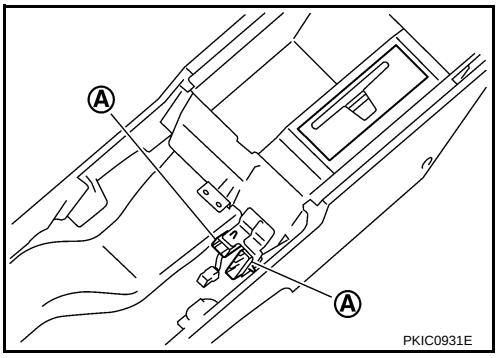
1. DVD player
2. Bracket LH
3. Bracket RH

Removal and Installation

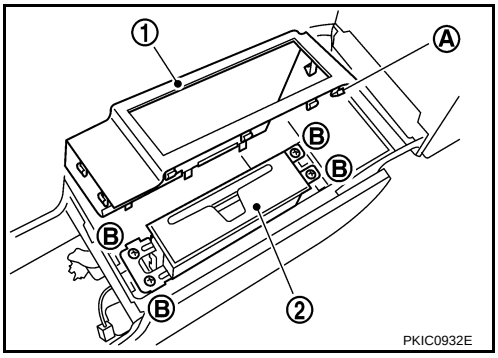
INFOID:0000000004155880

REMOVAL

1. Remove cup holder. Refer to IP-22, "CENTER CONSOLE : Disassembly and Assembly".
2. Disconnect sub harness connector.
3. Remove sub harness connectors (A) from bracket.



4. Remove metal clips (A) and 8 pawls. Then DVD player cover (1).
5. Remove screws (B) and remove DVD player (2).



INSTALLATION

Install in the reverse order of removal.

AUXILIARY INPUT JACKS

Exploded View

INFOID:0000000004155881

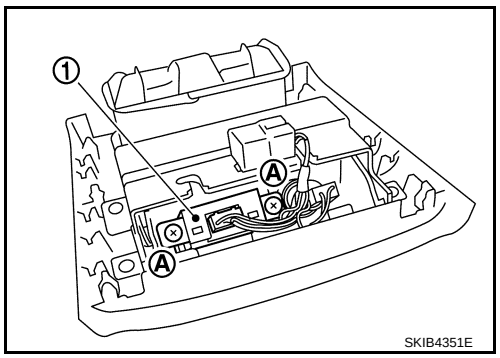
Refer to IP-22, "CENTER CONSOLE : Component Parts Location".

Removal and Installation

INFOID:0000000004155882

REMOVAL

1. Remove center console rear finisher. Refer to IP-22, "CENTER CONSOLE : Component Parts Location".
2. Remove screws (A) and disconnect connector. Remove auxiliary input jacks (1) from center console rear finisher.



INSTALLATION

Install in the reverse order of removal.

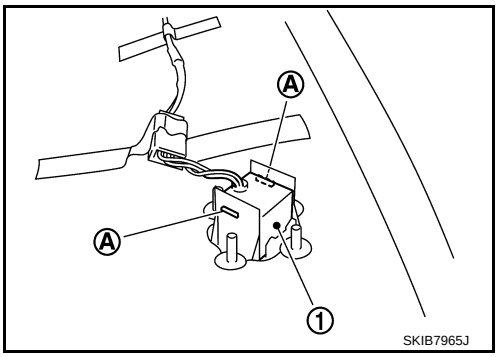
MICROPHONE

Removal and Installation

INFOID:0000000004155883

REMOVAL

1. Remove headlining. Refer to EI-63, "Component Parts Location".
2. Remove connector.
3. Raise tab (A) and remove microphone (1).



INSTALLATION

Install in the reverse order of removal.

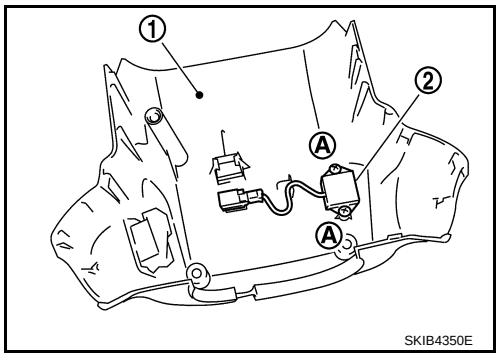
AUDIOPILOT® MICROPHONE

Removal and Installation

INFOID:0000000004155884

REMOVAL

1. Remove steering column lower cover. Refer to IP-12, "INSTRUMENT PANEL : Component Parts Location".
2. Remove screws (A) and disconnect connector.
3. Remove Microphone (2) from steering column lower cover (1).



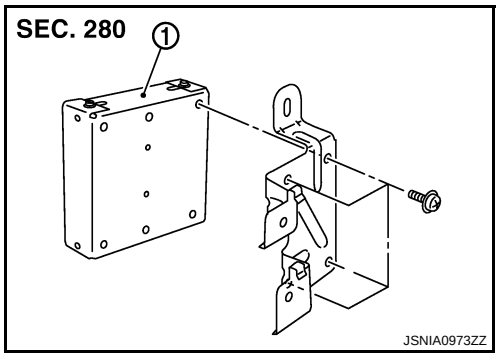
INSTALLATION

Install in the reverse order of removal.

CAMERA CONTROL UNIT

Exploded View

INFOID:0000000004155885



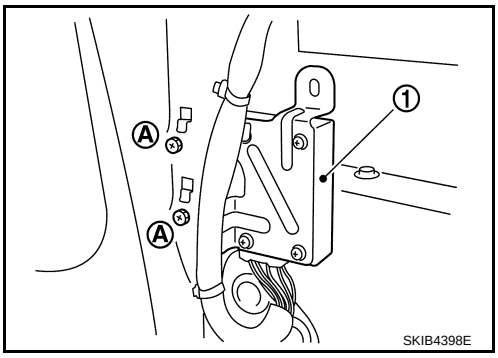
1. Camera control unit

Removal and Installation

INFOID:0000000004155886

REMOVAL

1. Remove trunk side finisher (RH). Refer to EI-66, "Component Parts Location".
2. Remove screws (A) and disconnect connector, and remove camera control unit (1).



INSTALLATION

Install in the reverse order of removal.

Adjustment

INFOID:0000000004155887

ADJUSTMENT

There may be a misalignment of possible route line center position of rear view monitor after removing camera control unit. Therefore, correct neutral position with the following procedure.

1. Steer the steering wheel to the leftmost and rightmost ends.
2. Drive vehicle at 30 km/h (18.6 MPH) min. speed at least 100 m (328.1 ft).

REAR VIEW CAMERA

Exploded View

INFOID:0000000004155888

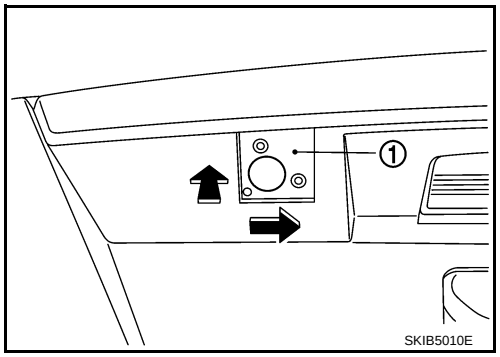
Refer to EI-68, "Component Parts Location".

Removal and Installation

INFOID:0000000004155889

REMOVAL

1. Remove trunk lid finisher inner. Refer to EI-68, "Removal and Installation".
2. Remove screws attaching camera and camera bracket.
3. Remove connector and connector clip.
4. Remove camera bracket (1) while pushing right direction of vehicle.



INSTALLATION

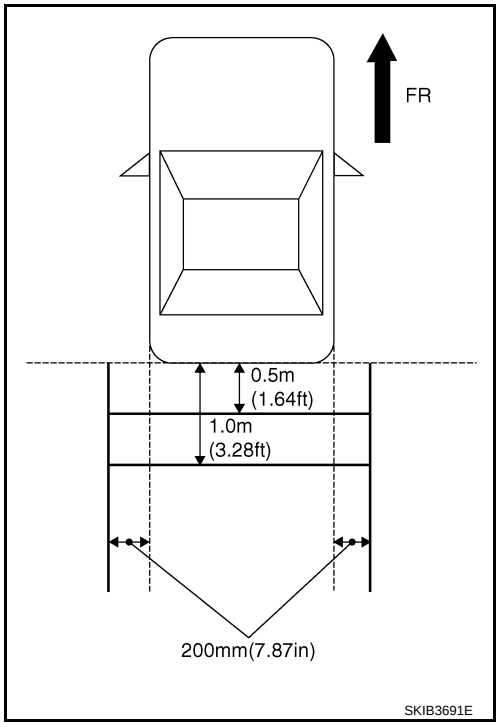
1. Install rear view camera and camera bracket while pressing to trunk room side.
2. Install connector and connector clip.
3. Install trunk lid finisher inner.

Adjustment

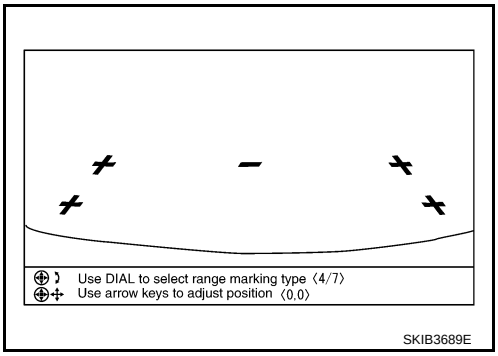
INFOID:0000000004155890

Adjust the guide line position if the guide line position is shifted after installing the rear view camera.

1. Draw lines on rearward area of the vehicle passing through the following points: 200 mm (7.87 in) from both sides of the vehicle, and 0.5 m (1.64 ft), 1.0 m (3.28 ft) from the rear end of the bumper.
2. Set into “Adjust offset of rear view camera” mode of Confirmation / Adjustment mode.



3. Rotate the center dial, and then select the guiding line pattern so that its angle is aligned with the correction line of the rear of the vehicle.



Selected pattern : 7

4. Make fine adjustment to the correction line of the rear of the vehicle with up/down/left/right switches so that its position is aligned with the guiding line. Press “”

Up/Down adjustment range : –20 – 20

Left/Right adjustment range : –20 – 20

CAUTION:

Never operate other function such as pressing BACK while writing index data.

If Confirmation/Adjustment mode does not function in the above procedure, perform one of the following service to adjust the index again.

- **Remove battery for five min. Then reconnect battery.**
- **Remove camera control unit connector for five min. Then reconnect camera control unit connector.**

STEERING ANGLE SENSOR

Exploded View

INFOID:0000000004155891

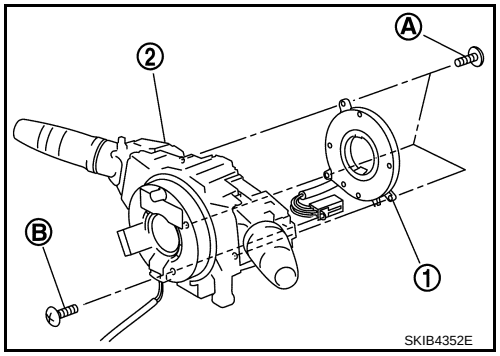
Refer to PS-9, "On-Vehicle Inspection and Service".

Removal and Installation

INFOID:0000000004155892

REMOVAL

1. Remove combination switch. Refer to LT-177, "Removal and Installation".
2. Remove screws (A) and remove connector mount screw (B).
3. Remove steering angle sensor (1) from combination switch (2).



INSTALLATION

Install in the reverse order of removal.

CAUTION:

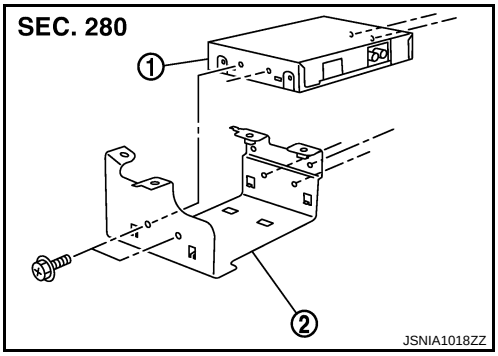
Insert the projection area, and install steering wheel angle sensor while fitting adjusting the triangle marks (Larger mark should be upward.).

SATELLITE RADIO TUNER

Exploded View

INFOID:0000000004155893

1. Satellite radio tuner
2. Bracket

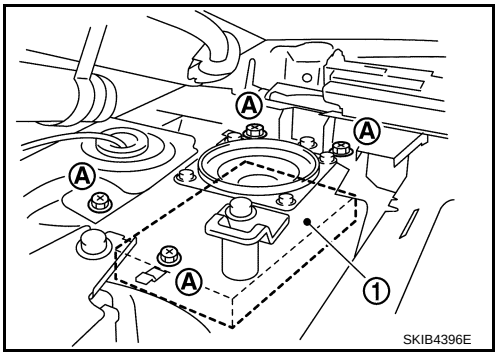


Removal and Installation

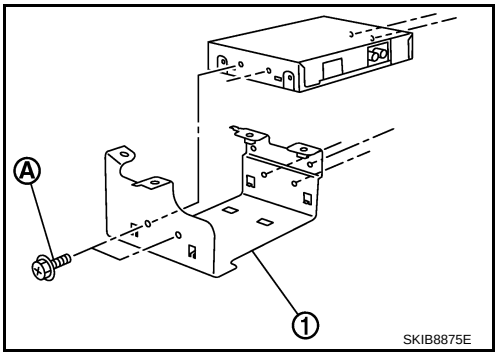
INFOID:0000000004155894

REMOVAL

1. Remove trunk front finisher. Refer to EI-66, "Removal and Installation".
2. Remove rear parcel shelf finisher. Refer to EI-53, "Removal and Installation".
3. Remove screws (A).
4. Disconnect connector and remove satellite radio tuner (1) from trunk room side.



5. Disconnect screws (A) and remove bracket (1).



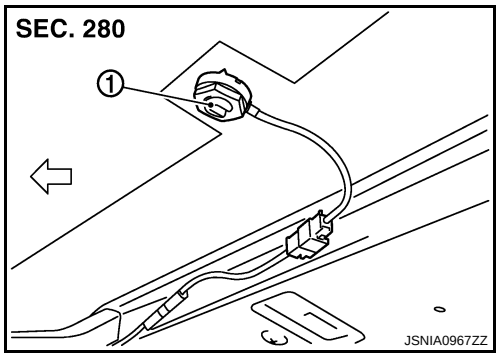
INSTALLATION

Installation is the reverse order of removal.

SATELLITE RADIO ANTENNA

Exploded View

INFOID:0000000004155895



⇦: Vehicle front
1. Satellite radio antenna

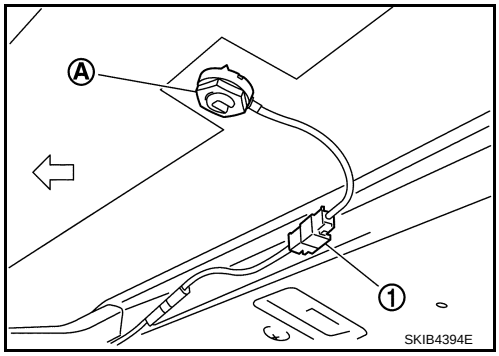
Removal and Installation

INFOID:0000000004155896

REMOVAL

1. Remove headlining assembly (rear) to secure work space between vehicle and headlining. Refer to EI-63, "Removal and Installation" [with normal roof] EI-63, "Removal and Installation" [with sunroof].
2. Remove nuts (A), and then disconnect connector (1).
3. Remove satellite radio antenna from roof panel.

⇦: Vehicle front



INSTALLATION

Install in the reverse order of removal.

Satellite radio antenna mounting nut : **6.5 N·m (0.66 kg-m, 58 in-lb)**

CAUTION:

Be careful about tightening torque. Antenna sensitivity becomes poor, and when it is excessive, roof panel may be deformed, when satellite radio antenna mounting nut tightening torque is loose.

TEL ADAPTER UNIT

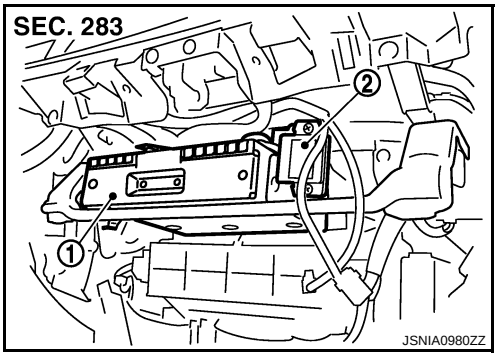
Exploded View

INFOID:0000000004155897

REMOVAL

Refer to IP-20, "GLOVE BOX : Removal and Installation".

DISASSEMBLY



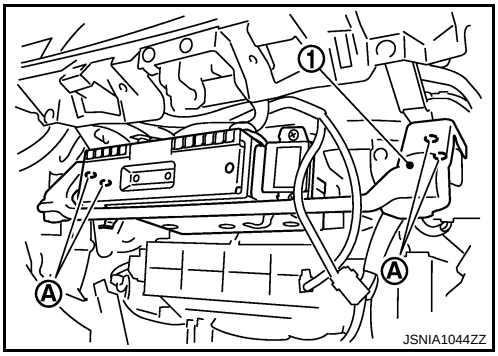
1. TEL adapter unit
2. TEL antenna

Removal and Installation

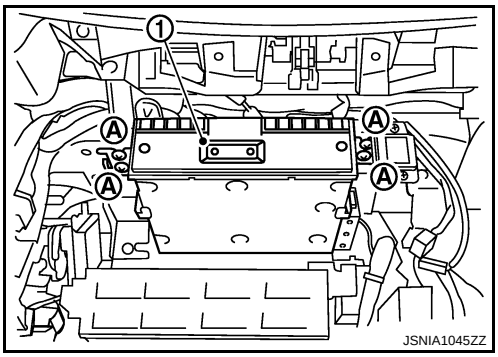
INFOID:0000000004155898

REMOVAL

1. Remove glove box cover. Refer to IP-20, "GLOVE BOX : Removal and Installation".
2. Remove screws (A), and remove knee assist protector assembly (1).



3. Remove screws (A), and disconnect connector.
4. Remove TEL adapter unit (1) TEL antenna comes off accordingly.



INSTALLATION

Install in the reverse order of removal.

TEL ANTENNA

Exploded View

INFOID:0000000004155899

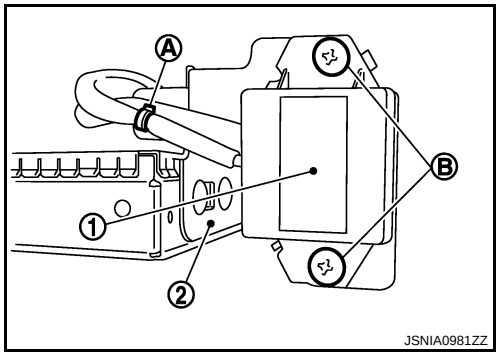
Refer to AV-508, "Exploded View".

Removal and Installation

INFOID:0000000004155900

REMOVAL

1. Remove TEL adapter unit. Refer to AV-508, "Removal and Installation".
2. Remove clip (A), and disconnect connector.
3. Remove screws (B) from the TEL adapter unit bracket RH (2), and remove TEL antenna (1).



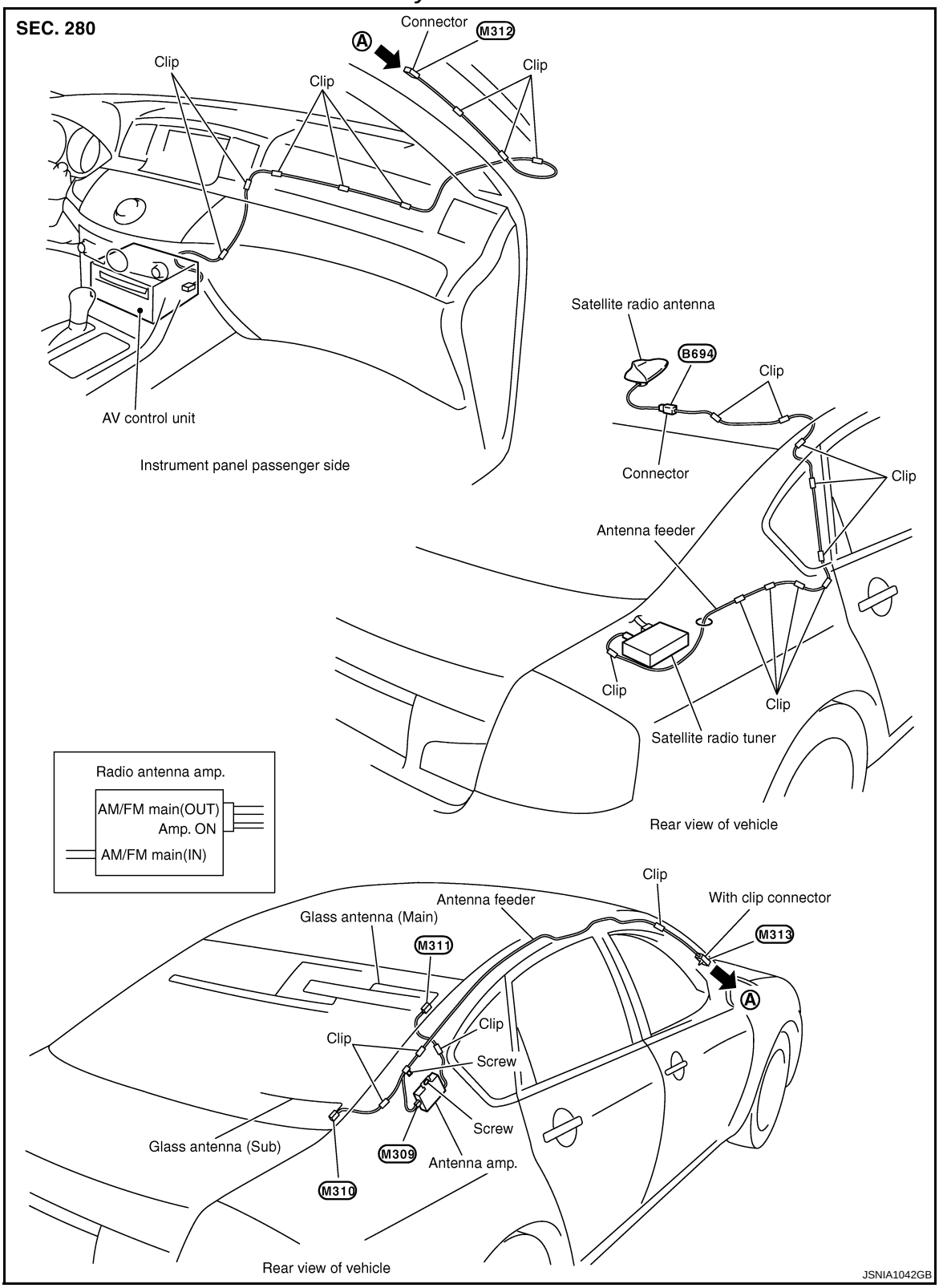
INSTALLATION

Install in the reverse order of removal.

ANTENNA FEEDER (RADIO)
WITHOUT NAVIGATION

WITHOUT NAVIGATION : Harness Layout

INFOID:0000000004155901

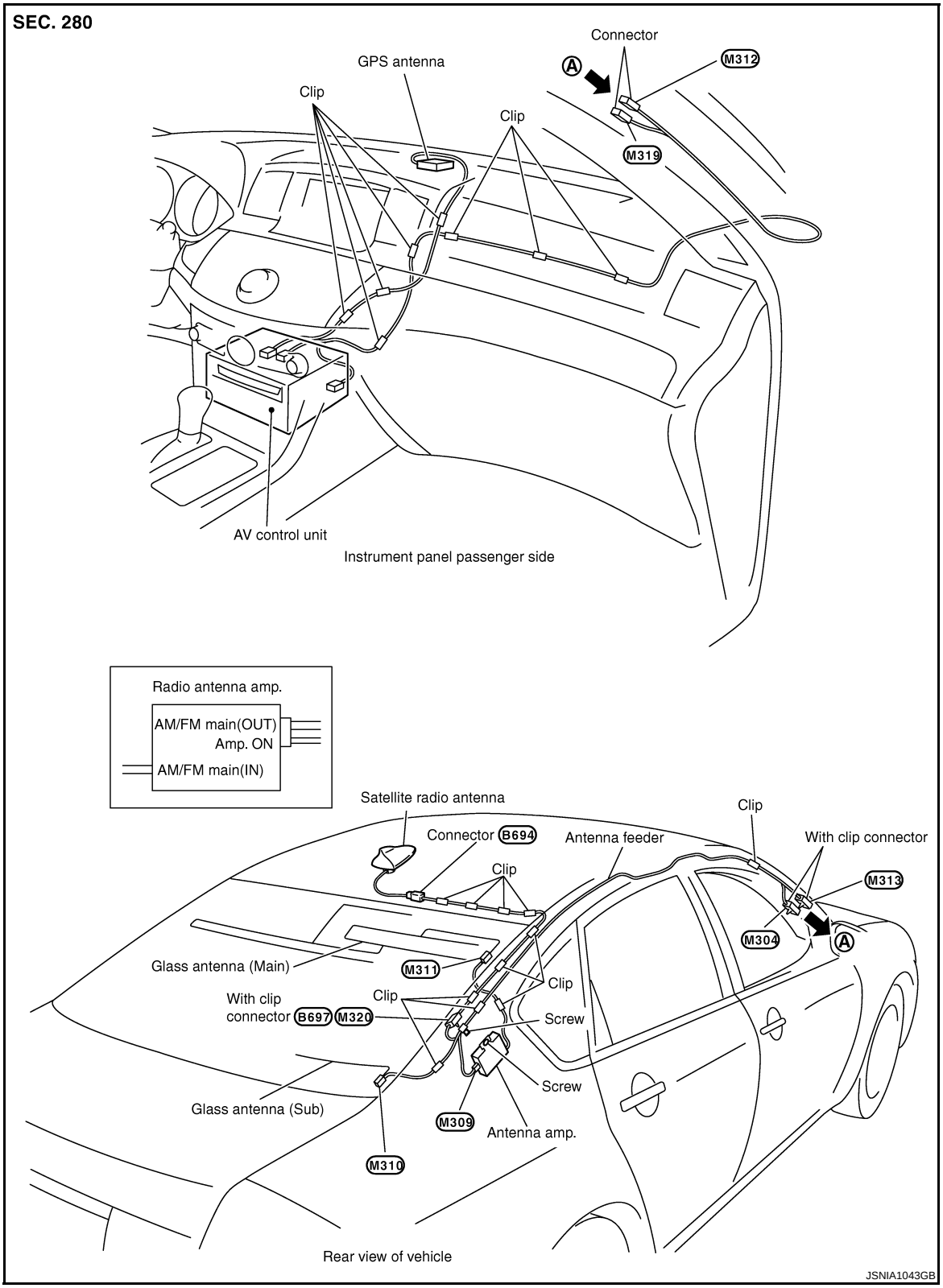


WITH NAVIGATION

WITH NAVIGATION : Harness Layout

INFOID:0000000004155902

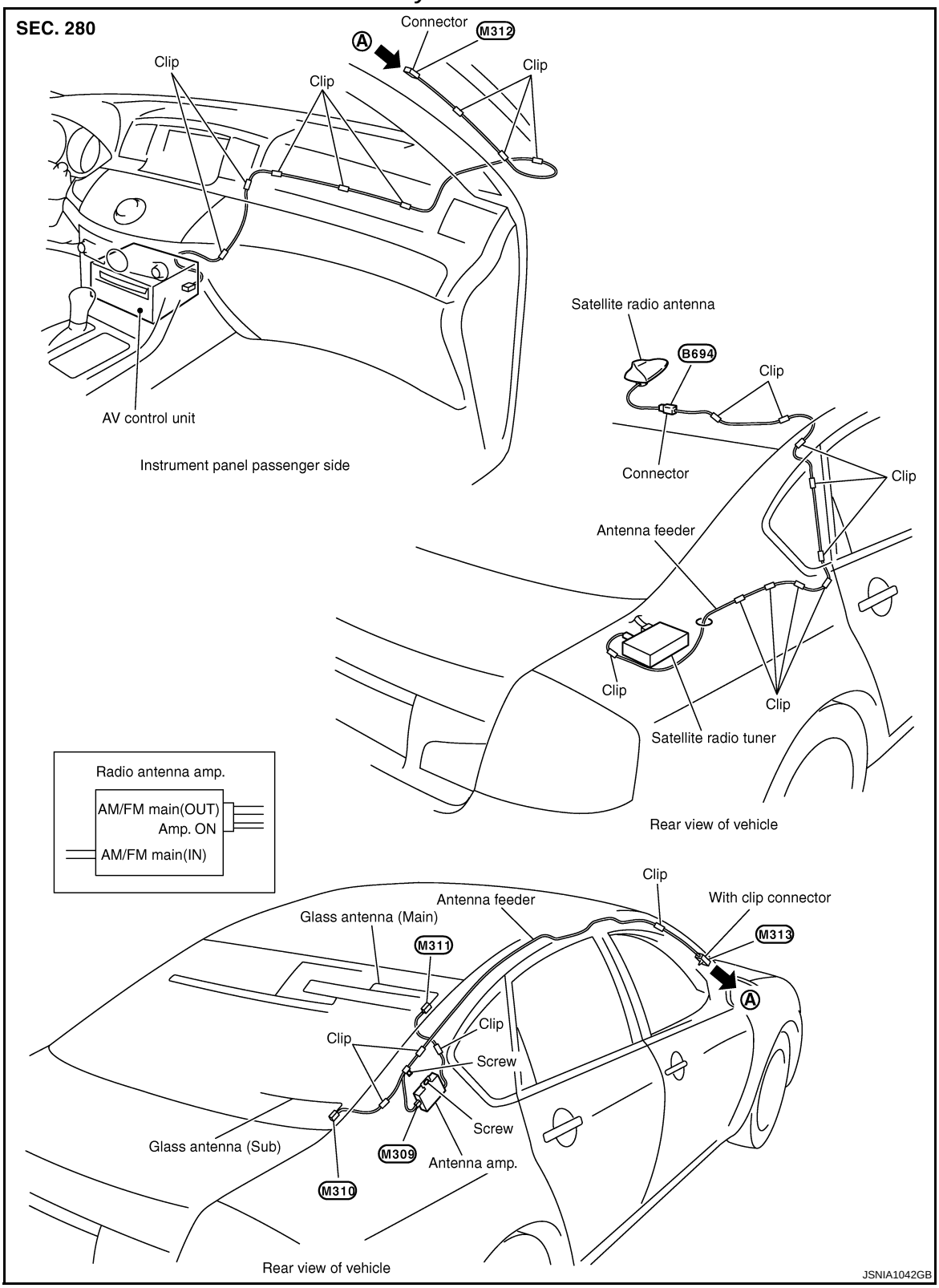
SEC. 280



ANTENNA FEEDER (SATELLITE RADIO)
WITHOUT NAVIGATION

WITHOUT NAVIGATION : Harness Layout

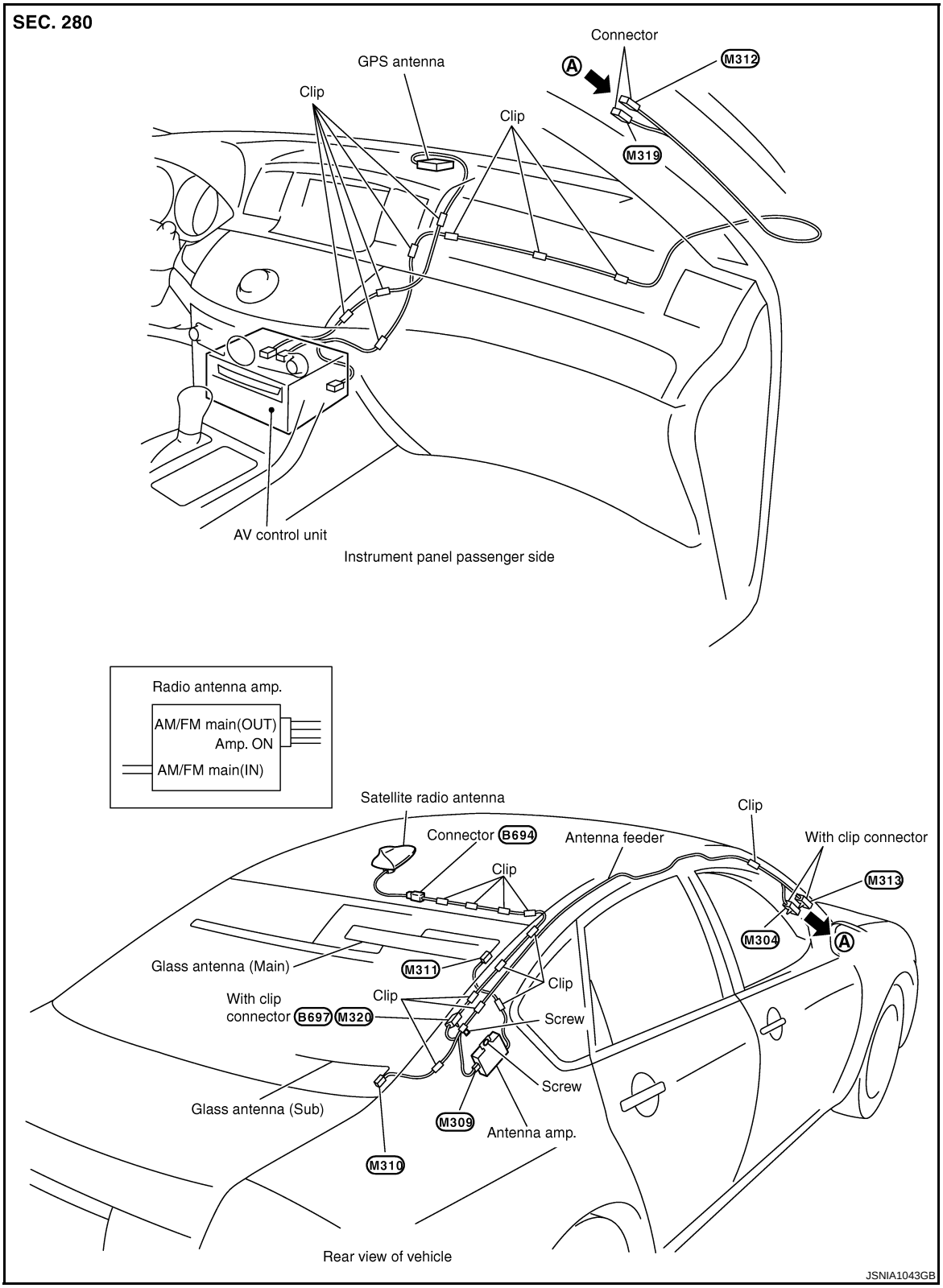
INFOID:0000000004155903



WITH NAVIGATION

WITH NAVIGATION : Harness Layout

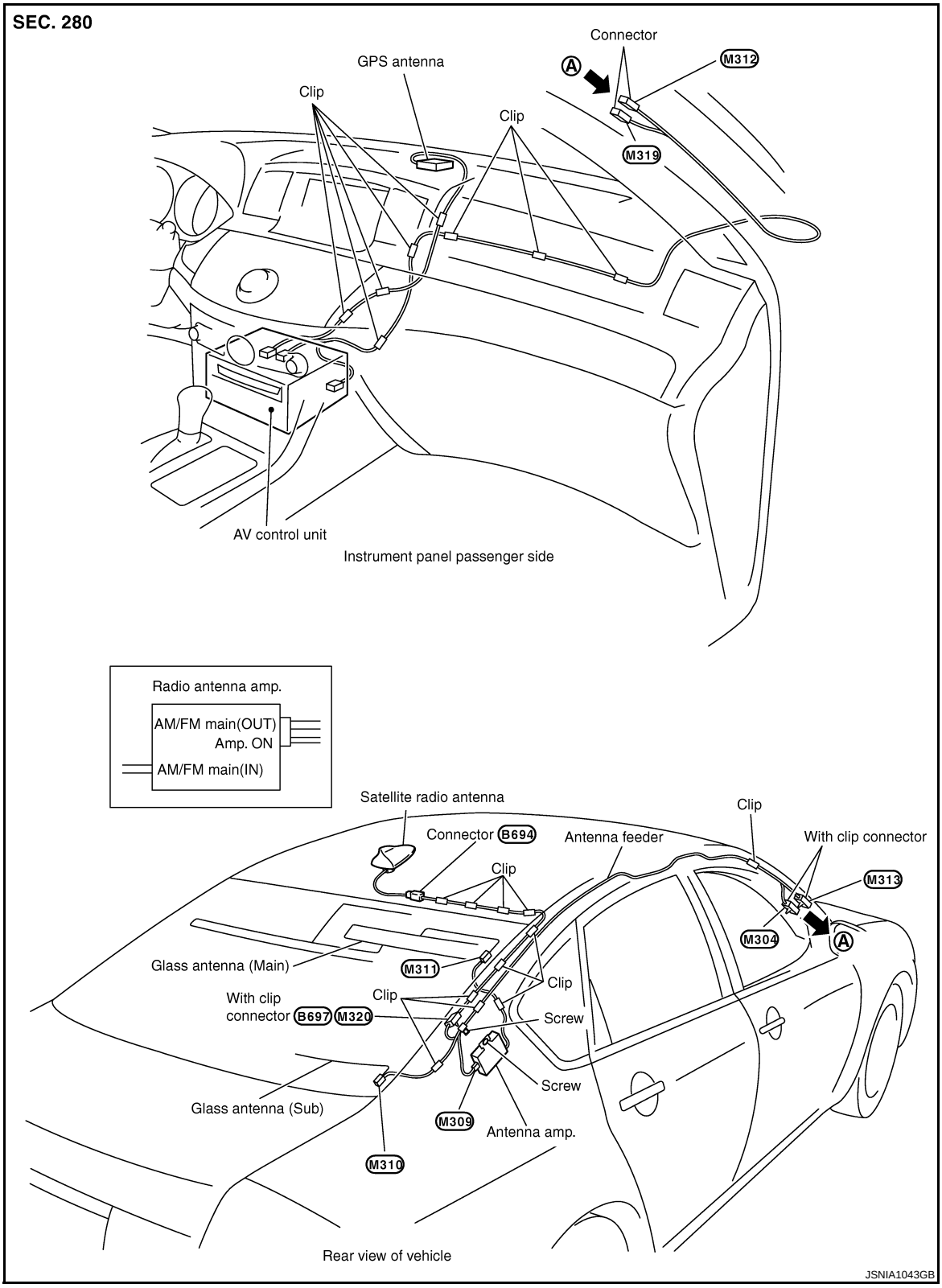
INFOID:0000000004155904



ANTENNA FEEDER (GPS)

Harness Layout

INFOID:0000000004155905



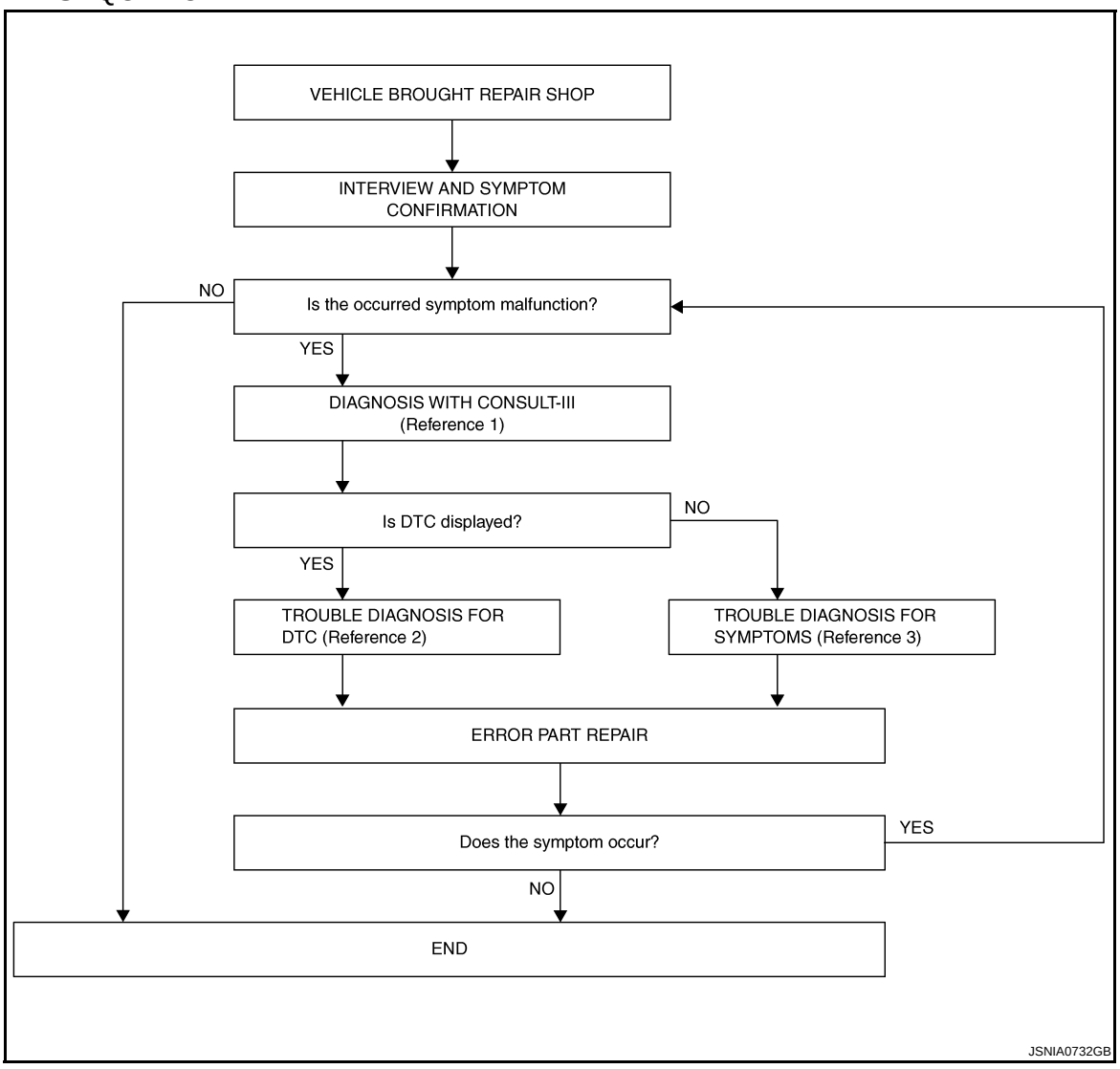
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000004155906

OVERALL SEQUENCE



- Reference 1··· Refer to AV-560, "CONSULT-III Function (MULTI AV)".
- Reference 2··· Refer to AV-685, "DTC Index".
- Reference 3··· Refer to AV-1048, "Symptom Table".

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.
NO >> INSPECTION END

2. DIAGNOSIS WITH CONSULT-III

1. Connect CONSULT-III and perform a self-diagnosis for “MULTI AV”. Refer to AV-560, "CONSULT-III Function (MULTI AV)".
   NOTE:
   Skip to step 4 of the diagnosis procedure if “MULTI AV” is not displayed.
2. Check if any DTC is displayed in the self-diagnosis results.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-685, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-1048, "Symptom Table".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “MULTI AV” with CONSULT-III.
   NOTE:
   Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Description

INFOID:0000000004155907

Always correct the center position of the rear view monitor's possible route line after disconnecting the battery negative terminal.

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement

INFOID:0000000004155908

1.CORRECTION OF CENTER POSITION OF REAR VIEW MONITOR'S POSSIBLE ROUTE LINE

Refer to the following for details.

>> Refer to AV-517, "REAR VIEW MONITOR POSSIBLE ROUTE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement".

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000004155909

When camera control unit is replaced, the center position of rear view monitor possible route line is corrected.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000004155910

1.CORRECTION OF CENTER POSITION OF REAR VIEW MONITOR'S POSSIBLE ROUTE LINE

Refer to the following for details.

>> Refer to AV-517, "REAR VIEW MONITOR POSSIBLE ROUTE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement".

REAR VIEW MONITOR POSSIBLE ROUTE LINE CENTER POSITION ADJUSTMENT

REAR VIEW MONITOR POSSIBLE ROUTE LINE CENTER POSITION ADJUSTMENT : Description

INFOID:0000000004155911

Adjust the center position of the possible route line of the rear view monitor if it is shifted.

REAR VIEW MONITOR POSSIBLE ROUTE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement

INFOID:0000000004155912

1.STEERING OPERATION

Steer the steering wheel to the leftmost and rightmost ends.

>> GO TO 2

2.DRIVING

Drive the vehicle straight ahead 100 m (328.1 ft) or more at a speed of 30 km/h (18.6 MPH) or more.

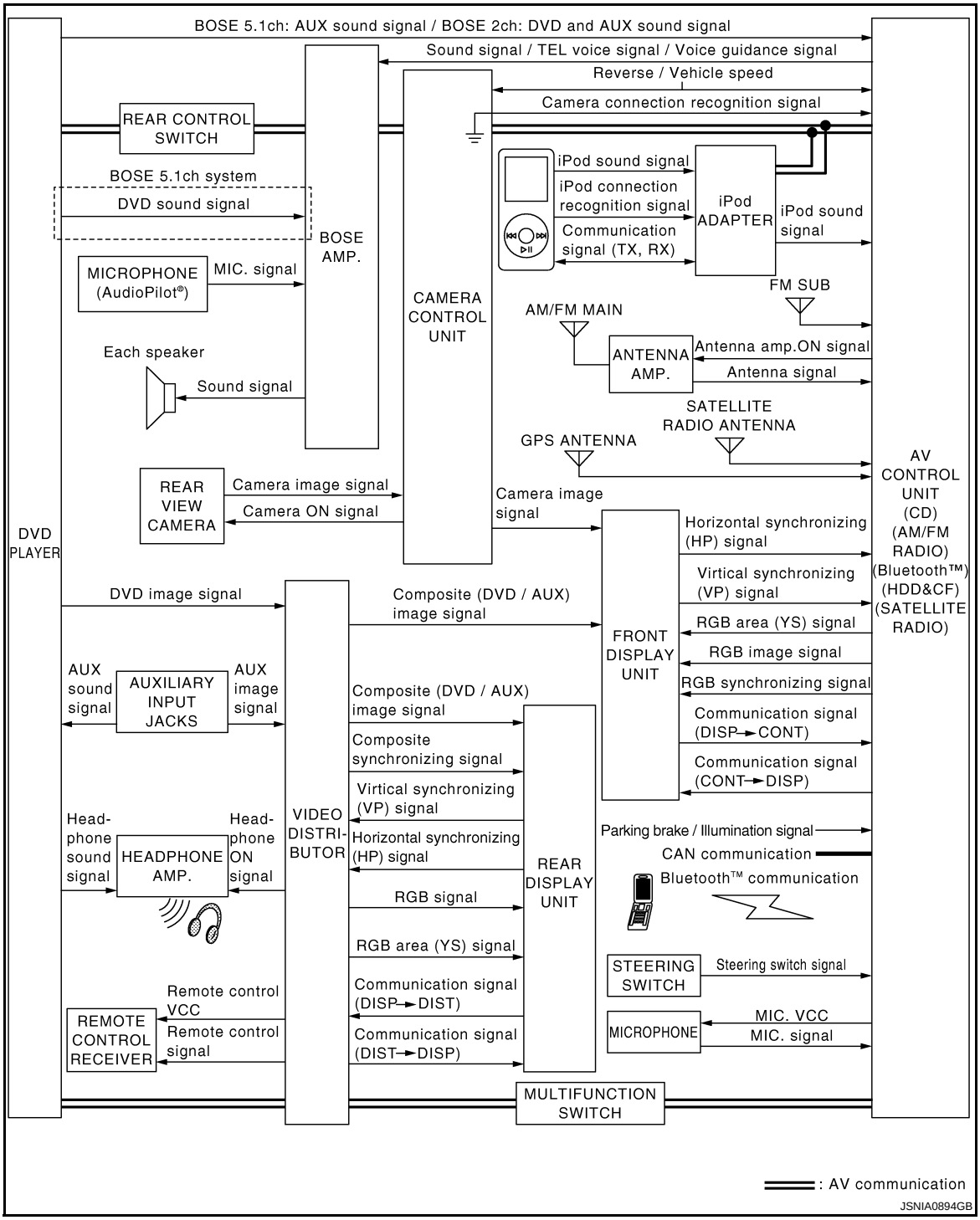
>> END

FUNCTION DIAGNOSIS

MULTI AV SYSTEM

System Diagram

INFOID:0000000004155913



NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

System Description

INFOID:0000000004155914

Multi AV system means that the following systems are integrated.

System name	System explanation
NAVIGATION SYSTEM	AV-525, "System Description"
AUDIO SYSTEM	AV-533, "System Description"
REAR VIEW MONITOR SYSTEM	AV-530, "System Diagram"
HANDS-FREE PHONE SYSTEM	AV-538, "System Diagram"
MOBILE ENTERTAINMENT SYSTEM	AV-541, "System Description"
VEHICLE INFORMATION SYSTEM	• Status of audio, climate control system, fuel economy, maintenance and navigation is displayed. • AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM, unified meter and A/C amp. and BCM.
AUXILIARY INPUT SYSTEM	Refer to the following “AUXILIARY INPUT SYSTEM”.
VOICE RECOGNITION SYSTEM	Refer to the following “VOICE RECOGNITION SYSTEM”.
TOUCH PANEL SYSTEM	Refer to the following “TOUCH PANEL SYSTEM”.

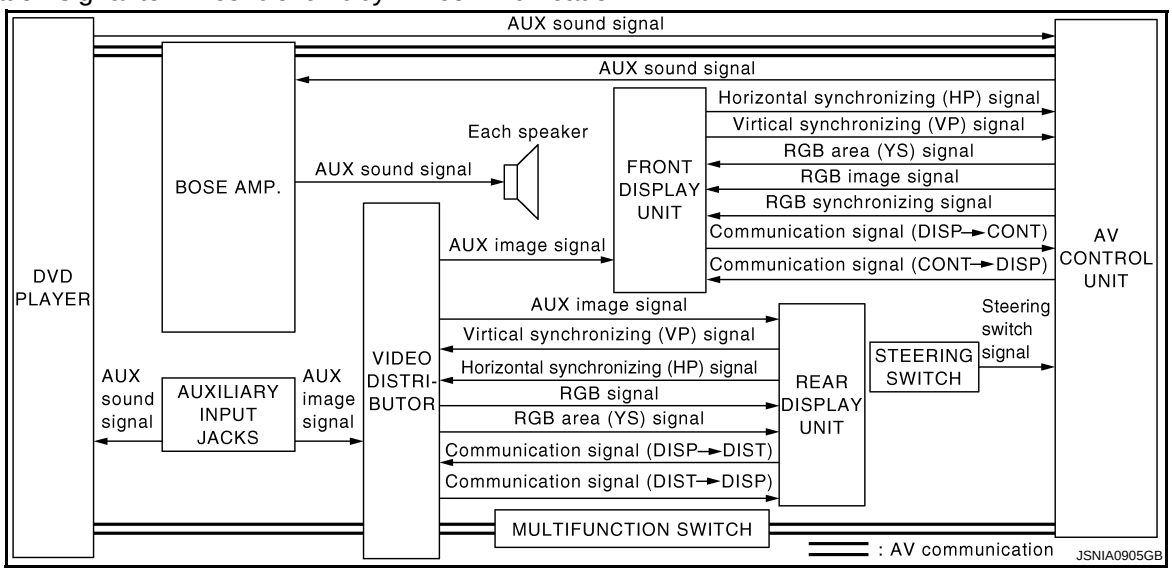
- AV control unit function by transmitting/receiving data one by one with each unit (slave unit) that configures them completely as a master unit by connecting between units that configure MULTI AV system with two AV communication lines (H, L).
- Two AV communication lines (H, L) adopt a twisted pair line that is resistant to noise.
- AV control unit is connected by CAN communication, and it receives data signal from ECM, unified meter and A/C amp. It computes and displays fuel economy information value with the obtained information. Transmitting/receiving of data signal is performed by BCM. Also, it transmits the required signal of vehicle setting and receives the response signal.
- The AV control unit receives the steering angle sensor signal via CAN communication from the steering angle sensor and transmits the steering angle sensor signal via AV communication to the camera control unit.
- AV control unit is connected with front display and serial communication, and it transmits the required signal of display and display control and receives the response signal from front display.

NOTE:
AV control unit can perform CONSULT-III self-operating function and on board self-diagnosis.
- CONSULT-III self diagnosis: Refer to AV-560, "CONSULT-III Function (MULTI AV)".
- On board self diagnosis: Refer to AV-545, "Diagnosis Description".

AUXILIARY INPUT SYSTEM

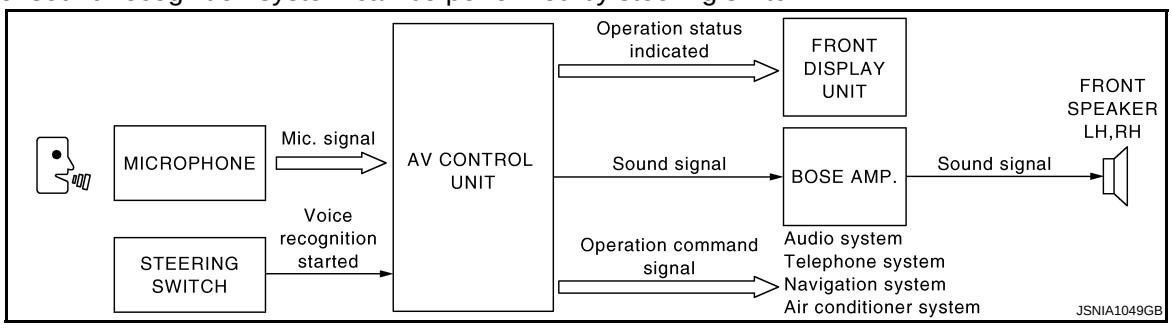
- The AUX sound signal input from the external input device is transmitted from auxiliary input jacks to DVD player. DVD player transmits it to AV control unit. AV control unit transmits the AUX sound signal to BOSE amp.
- The AUX image signal input from the external input device is transmitted to the video distributor. The video distributor transmits the AUX image signal to the front display unit and rear display unit.

- Operation can be performed with multifunction switch and steering switch. Multifunction switch transmits operation signal to AV control unit by AV communication.



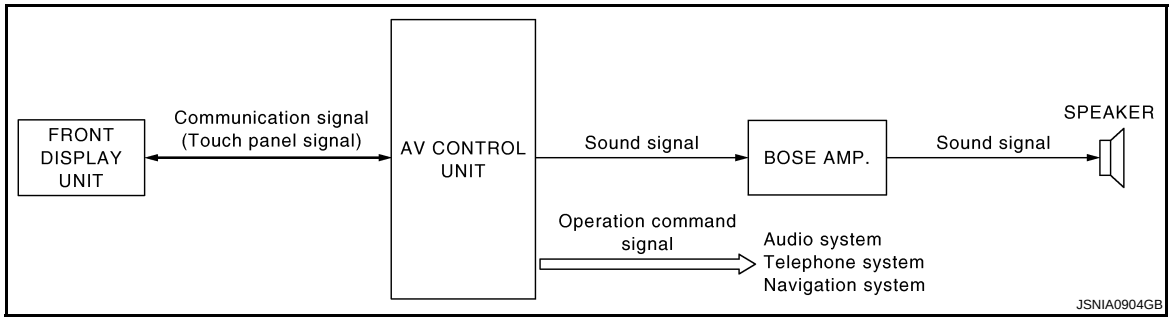
VOICE RECOGNITION SYSTEM

- Each operation of multi AV system can be performed by inputting sound to microphone.
- Start of sound recognition system can be performed by steering switch.



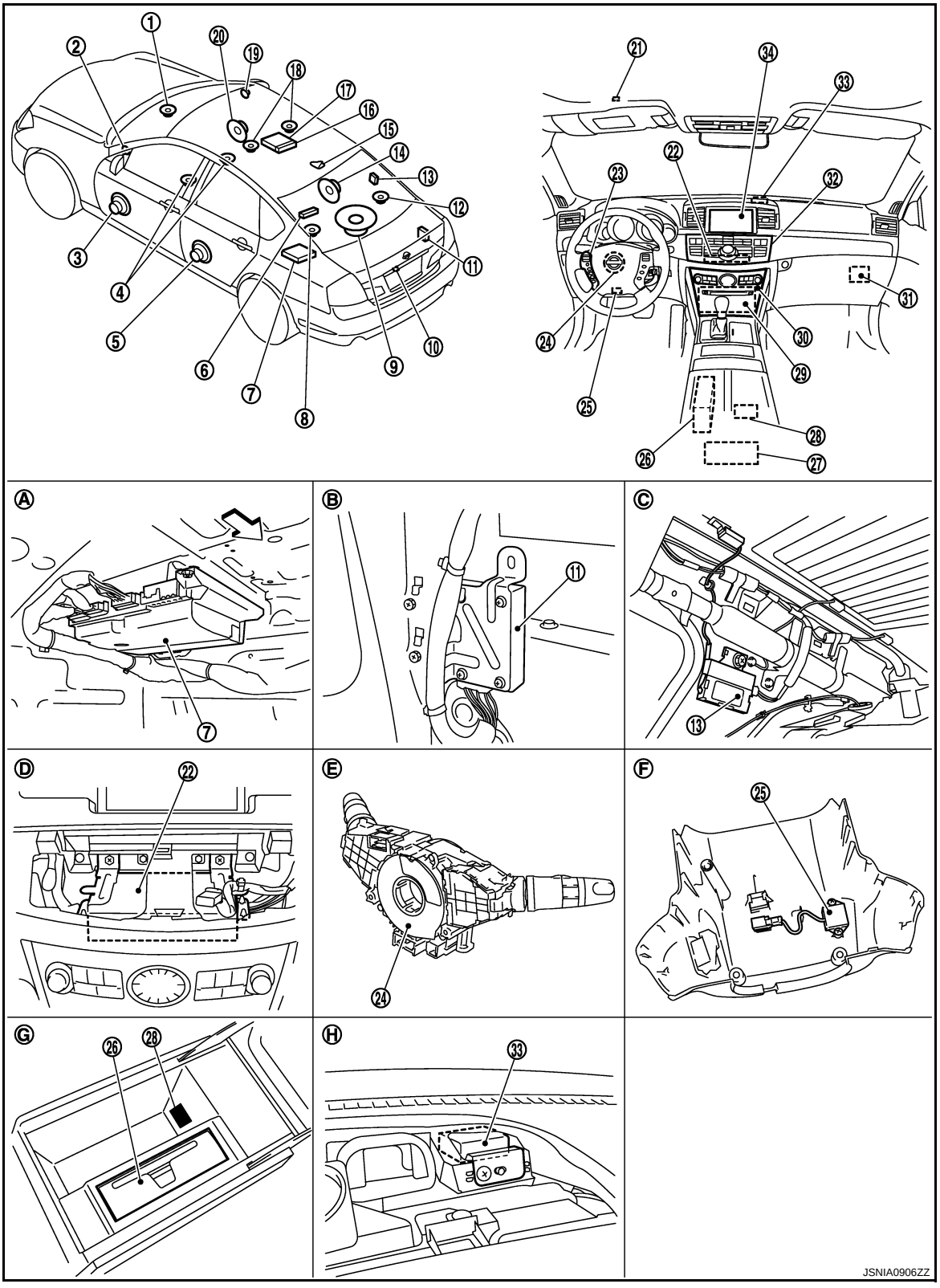
TOUCH PANEL SYSTEM

Each operation of multi AV system can be performed by directly touching a front display.



Component Parts Location

INFOID:0000000004155915



1. Center speaker
2. Tweeter LH
3. Front door speaker LH
4. Driver seat speaker
5. Rear door speaker LH
6. Rear control switch
7. BOSE amp.
8. Rear surround speaker LH
9. Woofer
10. Rear view camera
11. Camera control unit
12. Rear surround speaker RH

13.	Antenna amp.	14.	Rear door speaker RH	15.	Satellite radio antenna
16.	Headphone amp. & remote control receiver	17.	Rear display unit	18.	Passenger seat speaker
19.	Tweeter RH	20.	Front door speaker RH	21.	Microphone
22.	Video distributor	23.	Steering switch	24.	Steering angle sensor
25.	Microphone (for AudioPilot®)	26.	DVD player	27.	Auxiliary input jacks
28.	iPod connector	29.	AV control unit	30.	Preset switch
31.	iPod adapter	32.	Multifunction switch	33.	GPS antenna
34.	Front display unit				
A.	Under rear parcel LH side	B.	Trunk side finisher (RH) is removed	C.	Rear pillar finisher (RH) is removed
D.	Multifunction switch is removed	E.	Spiral cable part	F.	Steering column cover is removed
G.	In center console	H.	Center ventilator grille is removed		
⇨:	Vehicle front				

Component Description

INFOID:0000000004155916

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.
VIDEO DISTRIBUTOR	• It receives the image signal from the DVD player, and auxiliary input jack, and then transmits it to the front display unit and rear display unit. • It supplies the power to the remote control receiver, and then receives the operation signal from the remote control receiver. • Composite synchronize signal is output to rear display unit. • It transmits ON signal to headphone amp.
FRONT DISPLAY UNIT	• Front display image is controlled by the serial communication from AV control unit. • RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing). Composite image signal (auxiliary and DVD images) is input from the video distributor. Camera image signal is input from camera control unit. • Synchronize signal (HP, VP) is output to AV control unit. • Touch panel function can be operated for each system by touching a display directly.
REAR DISPLAY UNIT	• Rear display image is controlled by the serial communication from video distributor. • RGB image signal is input from video distributor (RGB image and RGB area). Composite image signal (DVD and auxiliary images) is input from the video distributor. • Synchronize signal (HP, VP) is output to video distributor.

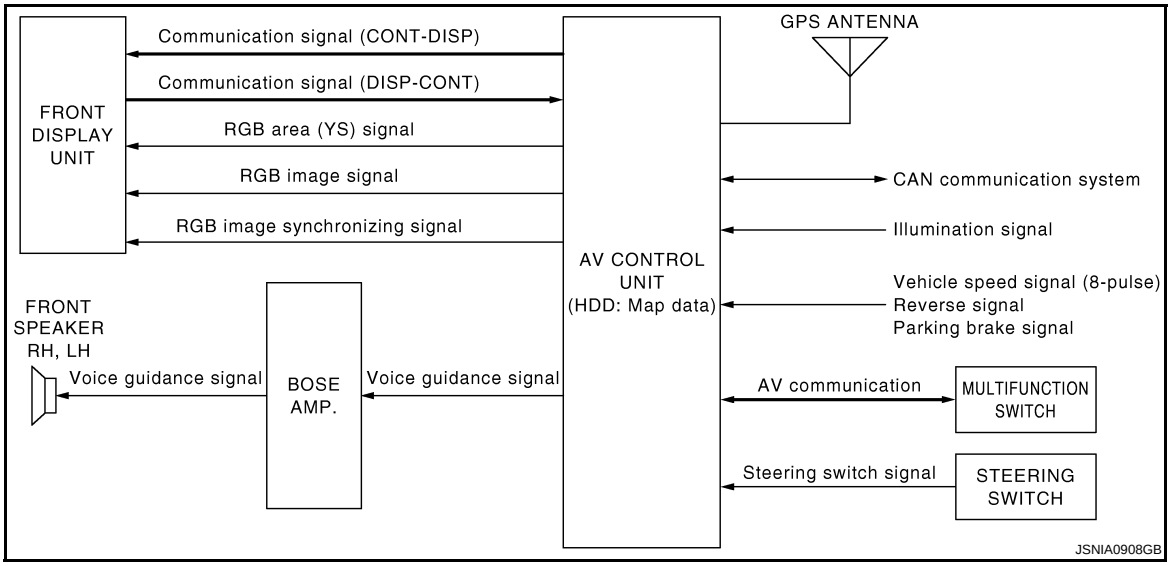
Part name	Description
BOSE AMP.	• It is connected via AV communication and controlled by the AV control unit. • It receives the voice guidance signal from AV control unit and output it to the front speaker. • It controls sound volume of each speaker when outputting TEL voice and voice guidance. • It subjects to AudioPilot® processing when receiving sound signal from microphone for AudioPilot®.
	BOSE 2ch system • It amplifies the sound signal from the AV control unit and output it to each speaker.
	BOSE surround audio 5.1ch system • It amplifies the sound signal from the AV control unit and the DVD sound signal from DVD player, and then output them to each speaker. • It subjects to Centerpoint® processing.
WOOFER	• Outputs sound signal from BOSE amp. • Outputs low-pitched sound.
FRONT DOOR SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
TWEETER	• Outputs sound signal from BOSE amp. • Outputs high range sound.
REAR DOOR SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
CENTER SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
SEAT SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
REAR SURROUND SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
MULTIFUNCTION SWITCH	• Operation panel is equipped with the centralized switch where audio, auxiliary input and navigation operations are integrated. • The multifunction switch is connected via AV communication, and it transmits the operation signals of the multifunction switch and preset switch.
PRESET SWITCH	• Operation panel is equipped with the centralized switch where audio and air conditioner operations are integrated. • The preset switch is connected to the multifunction switch by hard-wire, and it transmits the operation signal to the multifunction switch.
DVD PLAYER	• It transmits the playback DVD image signal to the video distributor. It also transmits the input AUX sound signal to the AV control unit. BOSE 2ch system • It transmits the playback DVD sound signal to the AV control unit. BOSE surround audio 5.1ch system • It transmits the playback DVD sound signal to the BOSE amp.
CAMERA CONTROL UNIT	• Camera image signal is input from rear view camera. Camera image signal output to front display unit. • Power (camera ON signal) is transmitted to rear view camera. • AV control unit recognizes the presence of camera system with camera connection recognition signal. • Camera control unit is connected via AV communication, and it receives the control signal and steering angle signal from the AV control unit.
REAR VIEW CAMERA	• The image of vehicle rear view is transmitted to camera control unit. • It receives the power (camera ON signal) from the camera control unit and operates.
STEERING SWITCH	• Operations for audio, hands-free phone, audio response and navigation, etc. are possible. • Steering switch signal (operation signal) is output to AV control unit.

Part name	Description
MICROPHONE	• Used for hands-free phone operation and voice recognition. • Mic signal is transmitted to AV control unit. • Power (Mic. VCC) is supplied from AV control unit.
AUXILIARY INPUT JACKS	Image signal of auxiliary input is transmitted to video distributor, and sound signal is transmitted to DVD player.
GPS ANTENNA	GPS signal is received and transmitted to AV control unit.
ANTENNA AMP.	• Radio signal received by glass antenna is amplified and transmitted to AV control unit. • Power (antenna amp. ON signal) is supplied from AV control unit.
SATELLITE RADIO ANTENNA	Satellite radio wave is received and transmitted to AV control unit.
iPod ADAPTER	• Inputs iPod sound signal from iPod®, and outputs iPod sound signal to AV control unit. • Receiving/transmitting of iPod® operation signals are performed as follows: - between AV control unit and iPod adapter: AV communication. - between iPod® and iPod adapter: serial communication.
STEERING ANGLE SENSOR	It is connected to the AV control unit and transmits the steering angle signal via CAN communication.
REAR CONTROL SWITCH	• Operations for audio, etc. are possible. • The rear control switch is connected via AV communication, and it transmits the operation signals of the rear control switch.
MICROPHONE (for AudioPilot®)	• Used for AudioPilot®. • Mic signal is transmitted to BOSE amp.

NAVIGATION SYSTEM

System Diagram

INFOID:0000000004155917



System Description

INFOID:0000000004155918

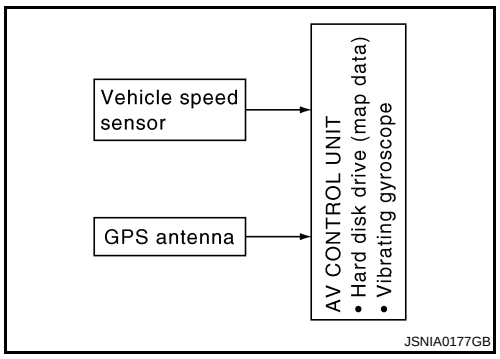
DESCRIPTION

- The AV control unit controls navigation function while GPS tuner has built-in map data, GYRO (angle speed sensor), on the HDD (Hard Disk Drive).
- The AV control unit inputs operation signal with communication signal, through display (touch panel) and multifunction switch and steering switch.
- Guide sound is output to front speaker through BOSE amp. from AV control unit when operating navigation system.
- A vehicle position is calculated with the GYRO (angle speed sensor), vehicle sensor, signal from GPS satellite and map data stored on HDD (Hard Disk Drive), and transmits the map image signal (RGB image, RGB area, RGB image synchronizing) to the display.

POSITION DETECTION PRINCIPLE

The navigation system periodically calculates the current vehicle position according to the following three types of signals.

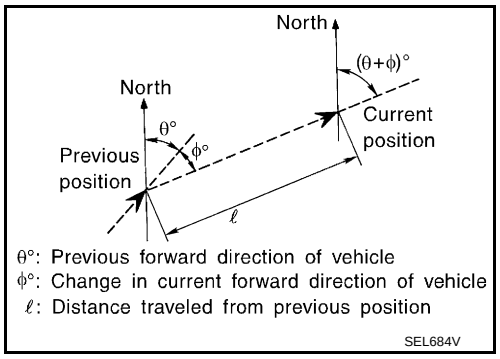
- Travel distance of the vehicle as determined by the vehicle speed sensor
- Vehicle turning angle determined by the gyroscope (angular speed sensor)
- The travel direction of the vehicle determined by the GPS antenna (GPS information)



The current position of the vehicle is then identified by comparing the calculated vehicle position with map data, which is stored in the HDD (Hard Disk Drive) (map-matching), and indicated on the screen with a current location mark. More accurate data is used by comparing position detection results from GPS to the map-matching.

The current position is calculated by detecting the travel distance from the previous calculation point, and its direction change.

- Travel distance
  The travel distance is generated from the vehicle speed sensor input signal. The automatic distance correction function is adopted for preventing a miss-detection of the travel distance because of tire wear etc.
- Travel direction
  The gyroscope (angular velocity sensor) and GPS antenna (GPS information) generate the change of the travel direction. Both have advantages and disadvantages as per the following descriptions.

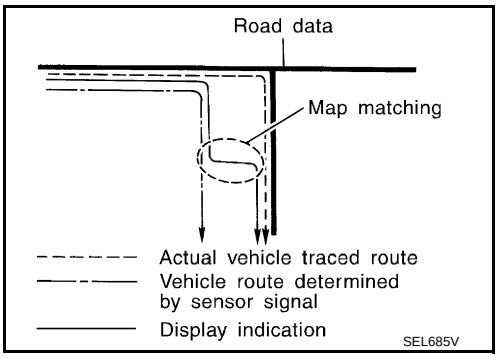


Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	The turning angle is precisely detected.	Errors are accumulated when driving a long distance without stopping.
GPS antenna (GPS information)	The travel direction (North/South/East/West) is detected.	The travel direction is not precisely detected when driving slowly.

Input signals are prioritized in each situation. However, this order of priority may change in accordance with more detailed travel conditions so that the travel direction is detected more accurately.

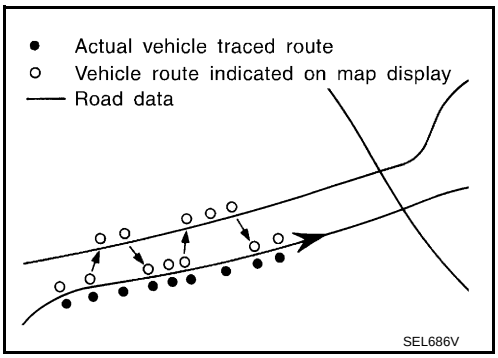
MAP-MATCHING

Map-matching repositions the vehicle on the road map when a new location is judged to be more accurate. This is done by comparing the current vehicle position (calculated by the normal position detection method) from the map data stored in the HDD (Hard Disk Drive).

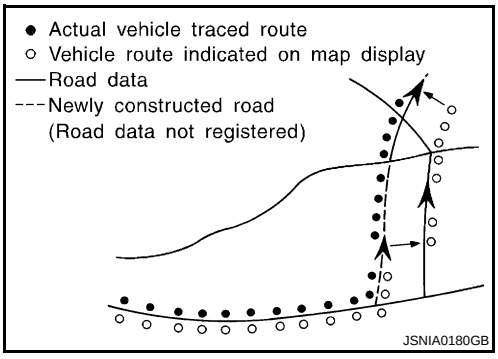


There is a possibility that the vehicle position may not be corrected in the following case, and when vehicle is driven over a certain distance or time in which GPS information is hard to receive. Correct manually the current location mark on the screen.

- In map-matching, several alternative routes are prepared and prioritized in addition to the road judged as currently driving on.
  Therefore, due to errors in the distance and/or direction, an incorrect road may be prioritized, and the current location mark may be repositioned to the incorrect road.
  If two roads are running in parallel, they are of the same priority. Therefore, the current location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road, etc.

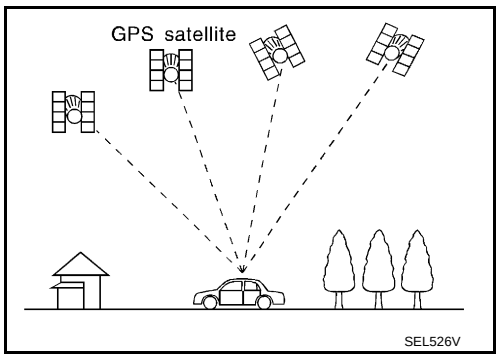


- Map-matching does not function correctly when road on which the vehicle is driving is new, etc. and not recorded in the map data. Also, map-matching does not function correctly when road pattern stored in the map data and the actual road pattern are different due to repair, etc.
  Therefore, the map-matching function judges other road as a currently driving road if the road is not in the map, and displays the current location mark on it. Later, the current location mark may be repositioned to the road if the correct road is detected.
- Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data is limited. Therefore, correction by map-matching is not possible when there is an excessive gap between current vehicle position and the position on the map.



GPS (GLOBAL POSITIONING SYSTEM)

GPS (Global Positioning System) is developed for and is controlled by the US Department of Defense. The system utilizes GPS satellites (NAVSTAR), transmitting out radio waves while flying on an orbit around the earth at an altitude of approximately 21,000 km.
The receiver calculates the travel position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves that four or more GPS satellites transmit (three-dimensional positioning). The GPS receiver calculates the travel position in two dimensions (latitude/longitude) with the previous altitude data if the GPS receiver receives only three radio waves (two-dimensional positioning). GPS position correction is not performed while stopping the vehicle.

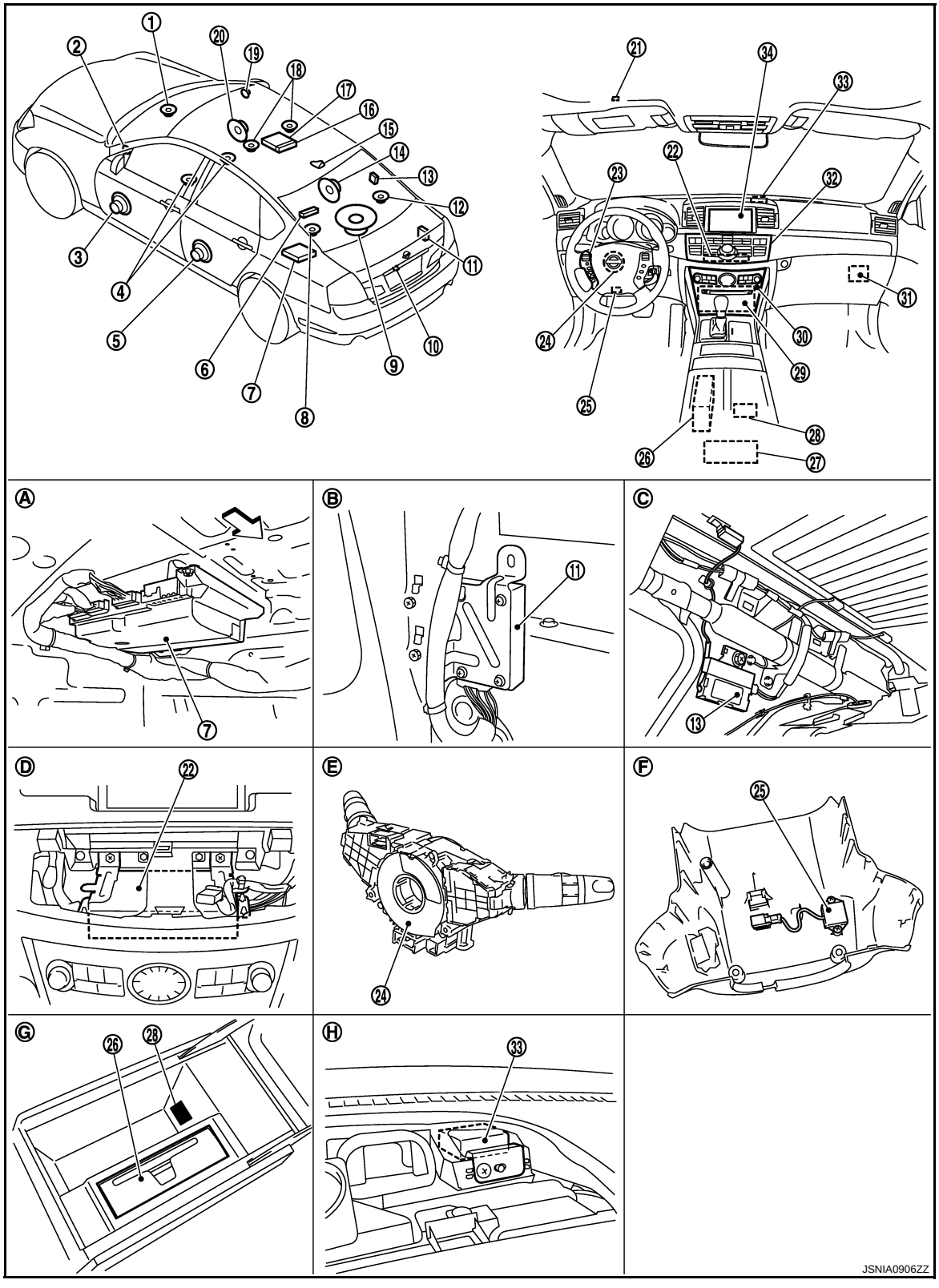


Accuracy of the GPS will deteriorate under the following conditions:
- In two-dimensional positioning, GPS accuracy will deteriorate when altitude of the vehicle position changes.
- The position of GPS satellite affects GPS detection precision. The position detection may not be precisely performed.
- The position detection is not performed if GPS receiver does not receive radio waves from GPS satellites. (Inside a tunnel, parking in a building, under an elevated highway etc.) GPS receiver may not receive radio waves from GPS satellites if any object is placed on the GPS antenna.

NOTE:
- The detection result has an error of approximately 10 m even with a high-precision three dimensional positioning.
- There may be cases when the accuracy is lowered and radio waves are stopped intentionally because the GPS satellite signal is controlled by the US trace control center.

Component Parts Location

INFOID:0000000004155919



1. Center speaker
2. Tweeter LH
3. Front door speaker LH
4. Driver seat speaker
5. Rear door speaker LH
6. Rear control switch
7. BOSE amp.
8. Rear surround speaker LH
9. Woofer
10. Rear view camera
11. Camera control unit
12. Rear surround speaker RH

13.	Antenna amp.	14.	Rear door speaker RH	15.	Satellite radio antenna
16.	Headphone amp. & remote control receiver	17.	Rear display unit	18.	Passenger seat speaker
19.	Tweeter RH	20.	Front door speaker RH	21.	Microphone
22.	Video distributor	23.	Steering switch	24.	Steering angle sensor
25.	Microphone (for AudioPilot®)	26.	DVD player	27.	Auxiliary input jacks
28.	iPod connector	29.	AV control unit	30.	Preset switch
31.	iPod adapter	32.	Multifunction switch	33.	GPS antenna
34.	Front display unit				
A.	Under rear parcel LH side	B.	Trunk side finisher (RH) is removed	C.	Rear pillar finisher (RH) is removed
D.	Multifunction switch is removed	E.	Spiral cable part	F.	Steering column cover is removed
G.	In center console	H.	Center ventilator grille is removed		
⇨:	Vehicle front				

Component Description

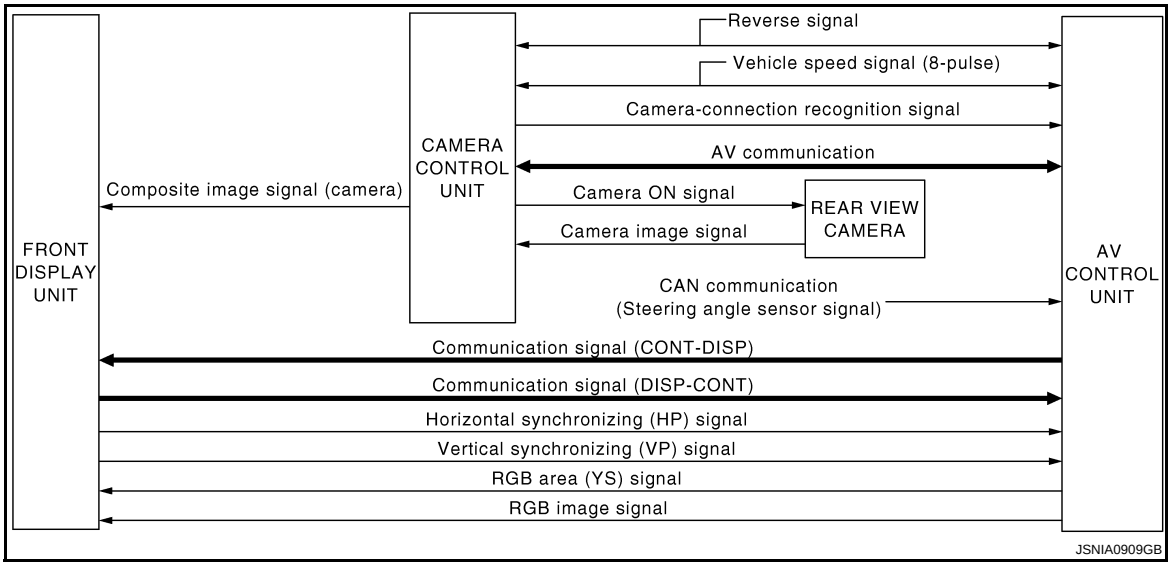
INFOID:0000000004155920

Part name	Description
AV CONTROL UNIT	• It is the master unit that controls each operation of the Navigation system. • The HDD (Hard Disk Drive) is built in, and the map data is stored in HDD. • The RGB image signal (map information) is output to the front display unit. • The voice guidance signal is output to the BOSE amp.
FRONT DISPLAY UNIT	• Map image signal is input from AV control unit, and it is indicated on the display. • Each operation of navigation can be performed by the touch panel function.
BOSE AMP.	Voice guidance signal is input from AV control unit, and it is output to front speakers.
FRONT DOOR SPEAKER	Voice guidance signal from BOSE amp. is output.
MULTIFUNCTION SWITCH	• Each operation of navigation can be performed. • Connected with preset switch via cable and operation signal is transmitted to AV control unit via AV communication.
STEERING SWITCH	• Each operation of navigation, etc. can be performed. • Switch operating signal is output to AV control unit.
GPS ANTENNA	GPS signal is received and is output to AV control unit.

REAR VIEW MONITOR SYSTEM

System Diagram

INFOID:0000000004155921



System Description

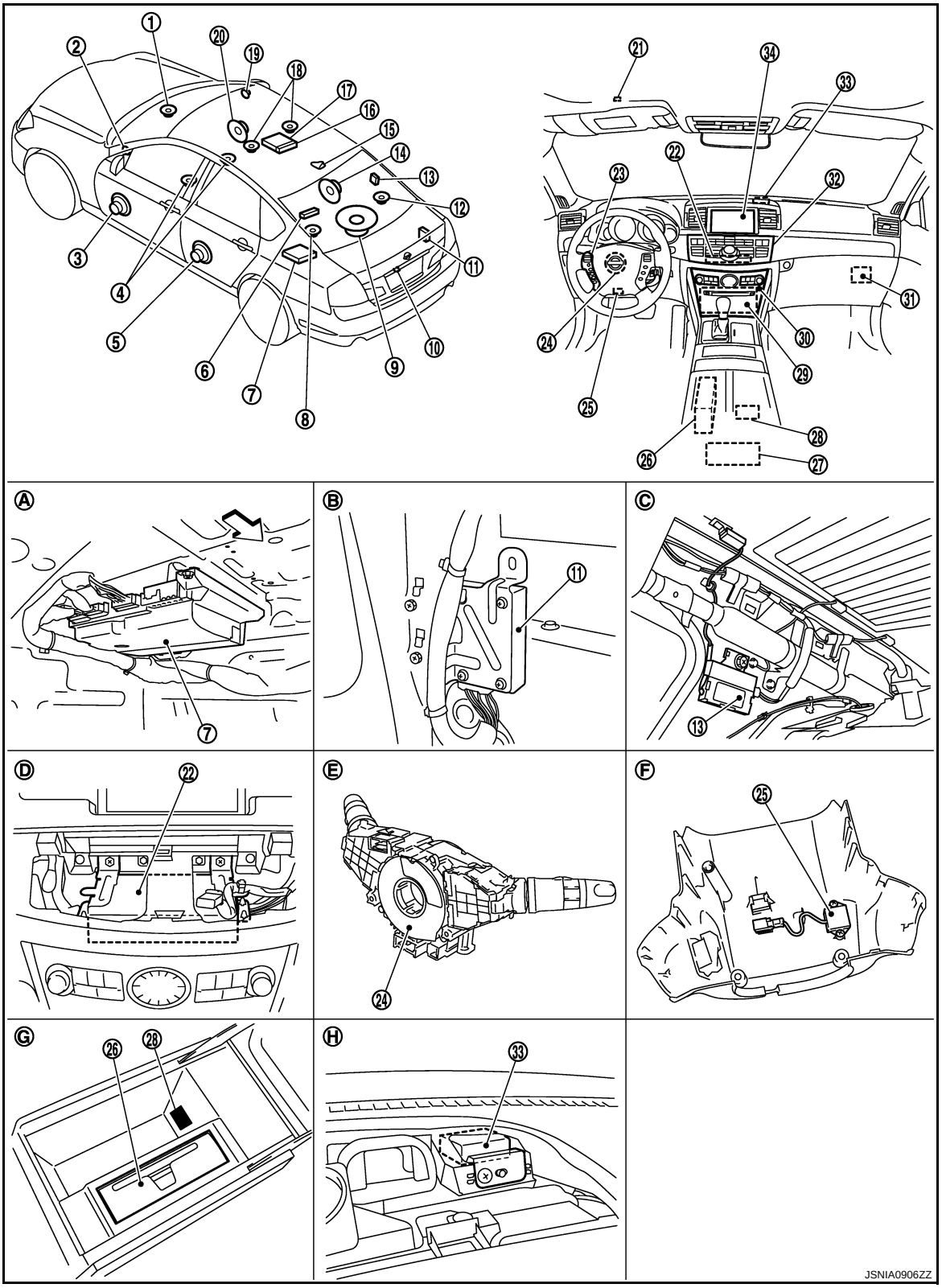
INFOID:0000000004155922

CAMERA IMAGE OPERATION PRINCIPLE

- Power is supplied to rear view camera from camera control unit and outputs camera image signal to camera control unit when selector lever is set to R position and the reverse signal on camera control unit is input.
- Camera control unit synthesizes guide lines and possible route lines with camera image signal from rear view camera, and transmits camera image signal to the front display unit. In this case, since the reverse signal is also input to AV control unit, the AV control unit recognizes the selector lever as in R position, and it switches serial communication signal between AV control unit and front display unit, and image that is displayed on the front display unit by RGB image signal with rear view monitor image. In addition, possible route lines are controlled by original sensor signal from steering angle sensor.
- The AV control unit determines whether rear view camera is equipped or not, based on the presence of camera connection recognition signal. It switches to rear view monitor image at the time of reverse signal input when it is equipped.
- Warning message under the rear view monitor display is described by AV control unit.
- AV control unit is connected in communication with camera control unit and front display unit, and it controls operation of rear view monitor system.

Component Parts Location

INFOID:0000000004155923



1. Center speaker
2. Tweeter LH
3. Front door speaker LH
4. Driver seat speaker
5. Rear door speaker LH
6. Rear control switch
7. BOSE amp.
8. Rear surround speaker LH
9. Woofer
10. Rear view camera
11. Camera control unit
12. Rear surround speaker RH

13.	Antenna amp.	14.	Rear door speaker RH	15.	Satellite radio antenna
16.	Headphone amp. & remote control receiver	17.	Rear display unit	18.	Passenger seat speaker
19.	Tweeter RH	20.	Front door speaker RH	21.	Microphone
22.	Video distributor	23.	Steering switch	24.	Steering angle sensor
25.	Microphone (for AudioPilot®)	26.	DVD player	27.	Auxiliary input jacks
28.	iPod connector	29.	AV control unit	30.	Preset switch
31.	iPod adapter	32.	Multifunction switch	33.	GPS antenna
34.	Front display unit				
A.	Under rear parcel LH side	B.	Trunk side finisher (RH) is removed	C.	Rear pillar finisher (RH) is removed
D.	Multifunction switch is removed	E.	Spiral cable part	F.	Steering column cover is removed
G.	In center console	H.	Center ventilator grille is removed		
⇨:	Vehicle front				

Component Description

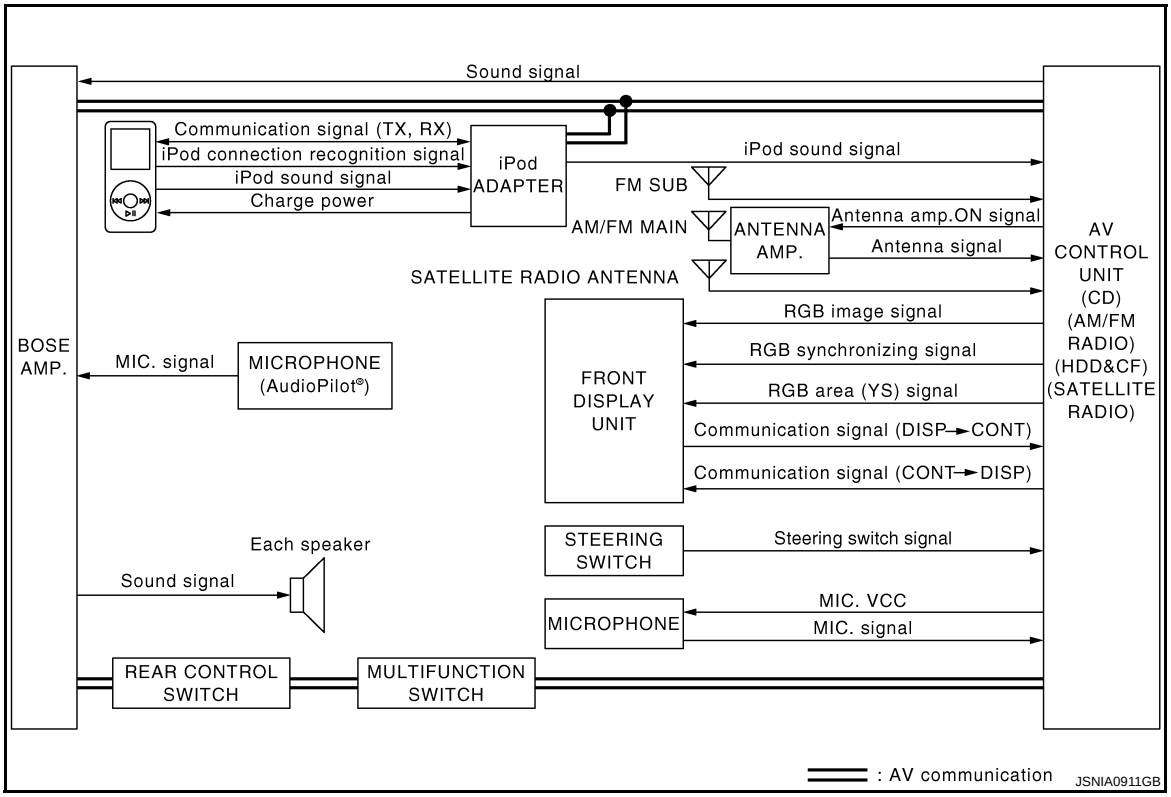
INFOID:0000000004155924

Part name	Description
AV CONTROL UNIT	• Image on display is changed to rear view monitor image with serial communication between AV control unit and front display unit. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • Warning displayed in rear view monitor image is illustrated.
FRONT DISPLAY UNIT	• Camera image signal is transmitted from camera control unit, and RGB image signal for warning display is transmitted from AV control unit. • Rear view monitor image is changed with the communication for AV control unit.
CAMERA CONTROL UNIT	• Camera image signal is input from rear view camera, and camera image is indicated on the front display unit. • Power (camera ON signal) is transmitted to rear view camera. • Camera control unit is connected via AV communication, and it receives the control signal and steering angle signal from the AV control unit. • AV control unit recognizes the presence of camera system with camera connection recognition signal.
REAR VIEW CAMERA	• The image of vehicle rear view is transmitted to camera control unit. • It receives the power (camera ON signal) from the camera control unit and operates.
STEERING ANGLE SENSOR	It is connected to the AV control unit and transmits the steering angle signal via CAN communication.

AUDIO SYSTEM

System Diagram

INFOID:0000000004155925



System Description

INFOID:0000000004155926

The audio system is equipped with the following functions. Each function is operated with multifunction switch, preset switch, touch panel, steering switch or audio recognition. Operation status of AUDIO is indicated at front display.

Function
AM/FM radio
Satellite radio
CD
Music Box (Hard Disk Drive)
CF (Compact Flash)
iPod connection
AudioPilot®
Centerpoint® (for BOSE surround audio 5.1ch system)

FUNCTION DESCRIPTION

Operating Signal

Audio system operation can be performed with multifunction switch, preset switch, steering switch, touch panel function or voice recognition function.

- Operating signal is transmitted to AV control unit with AV communication when it is operated by multifunction switch or preset switch.
- Operating signal is transmitted to AV control unit with steering switch signal when it is operated by steering switch.
- Refer to AV-518, "System Description" for explanation of voice recognition function and touch panel function.

Screen Front Display

- Switching of display is performed with serial communication between front display unit and AV control unit.
- The image signal to front display operating condition is performed with RGB image signal, RGB area signal and RGB synchronizing signal.

AM/FM Radio Mode
- AM/FM radio tuner is built into AV control unit.
- Audio signal is received by glass antenna, next it is amplified by antenna amp., and finally it is input to AV control unit. Audio signal is input to BOSE amp. and BOSE amp. outputs to each speaker for AV control unit.

Satellite Radio Mode
- Satellite radio tuner is built into AV control unit.
- Audio signal (satellite radio) is received by satellite radio antenna, and it is input to AV control unit. AV control unit outputs audio signal to BOSE amp. The signal is also outputted from BOSE amp. to each speaker.

CD Mode
- CD function is built into AV control unit.
- AV control unit outputs audio signal to BOSE amp. and BOSE amp. outputs to each speaker when CD is inserted to AV control unit.

Music Box Mode
- Music CD data is stored on HDD that is built into AV control unit, and it can be played.
- AV control unit outputs music (audio signal) that is stored on HDD to BOSE amp., and BOSE amp. outputs to each speaker.

CF Mode
- AV control unit has built in CF replay function.
- Music (audio signal) that is stored in CF outputs to BOSE amp., and BOSE amp. outputs to each speaker when CF is inserted into AV control unit.

iPod Connection
- Connect iPod® and iPod adapter with wire harness and iPod adapter input iPod sound signal from iPod®. When iPod mode is selected, iPod adapter output iPod sound signal to AV control unit. AV control unit output sound signal to BOSE amp., and BOSE amp. output sound signal to each speaker.
- Receiving/transmitting of iPod® operation signals are performed as follows:
- between AV control unit and iPod adapter: AV communication.
- between iPod® and iPod adapter: serial communication.
- The iPod® connection status can be recognized whether iPod adapter receives iPod connection recognition signal.
- The iPod adapter is possible to charge iPod®.

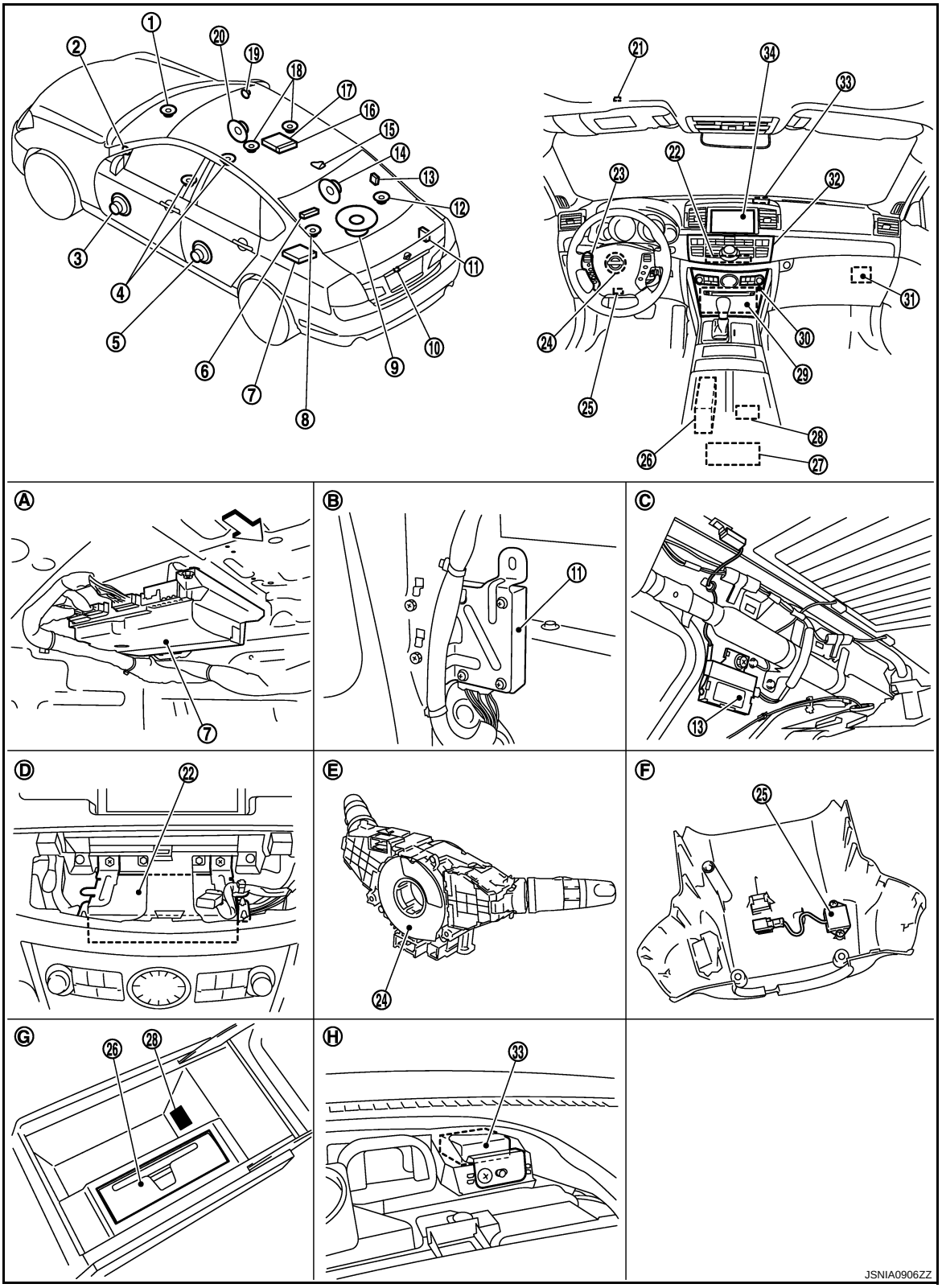
AudioPilot®

AudioPilot® is the sound improving system that picks up any noises and the sound of music coming into the vehicle by a microphone under the steering, and that the BOSE amp. revises the frequency feature of music at real time in response to the frequency feature of the noise while driving and listening to music.
- If low frequency area noise from vehicle is loud, it adjusts low frequency element of music to be bigger than vehicle noise.
- If high frequency area noise from vehicle is loud, it adjusts all frequency element of music to be bigger than vehicle noise.

Centerpoint® (For BOSE surround audio 5.1ch system)
CD and 2ch DVD stereo sound played at audio unit and DVD player are subjected to signal processing in BOSE amp. It can play the surround sound with presence.

Component Parts Location

INFOID:0000000004155927



1. Center speaker
2. Tweeter LH
3. Front door speaker LH
4. Driver seat speaker
5. Rear door speaker LH
6. Rear control switch
7. BOSE amp.
8. Rear surround speaker LH
9. Woofer
10. Rear view camera
11. Camera control unit
12. Rear surround speaker RH

13.	Antenna amp.	14.	Rear door speaker RH	15.	Satellite radio antenna
16.	Headphone amp. & remote control receiver	17.	Rear display unit	18.	Passenger seat speaker
19.	Tweeter RH	20.	Front door speaker RH	21.	Microphone
22.	Video distributor	23.	Steering switch	24.	Steering angle sensor
25.	Microphone (for AudioPilot®)	26.	DVD player	27.	Auxiliary input jacks
28.	iPod connector	29.	AV control unit	30.	Preset switch
31.	iPod adapter	32.	Multifunction switch	33.	GPS antenna
34.	Front display unit				
A.	Under rear parcel LH side	B.	Trunk side finisher (RH) is removed	C.	Rear pillar finisher (RH) is removed
D.	Multifunction switch is removed	E.	Spiral cable part	F.	Steering column cover is removed
G.	In center console	H.	Center ventilator grille is removed		
⇨:	Vehicle front				

Component Description

INFOID:0000000004155928

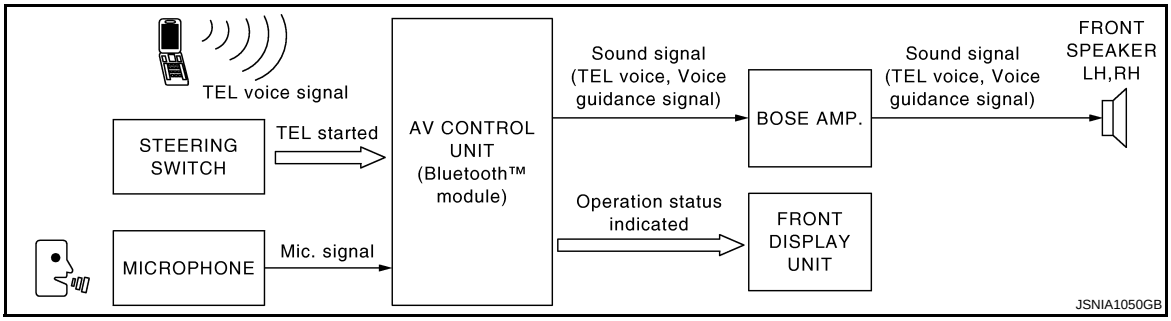
Part name	Description
AV CONTROL UNIT	• Receiving function of AM/FM/satellite radio, replaying function of CD, replaying/saving function of music box (HDD), replaying function of CF and voice recognition function are integrated. • It transmits the sound signal to the BOSE amp. with hard wire, and then transmits the control signals of AudioPilot® and Centerpoint® with AV communication.
FRONT DISPLAY UNIT	• Display image is controlled by the serial communication from AV control unit. • RGB image signal (audio operation condition) is input from AV control unit. • Touch panel function can be operated for each system by touching a display directly.
BOSE AMP.	• It is connected via AV communication and controlled by the AV control unit. • It receives the sound signal from AV control unit and output it to the each speaker. • It subjects to AudioPilot® processing when receiving sound signal from microphone for AudioPilot®. BOSE 2ch system • It amplifies the sound signal from the AV control unit and output it to each speaker. BOSE surround audio 5.1ch system • It amplifies the sound signal from the AV control unit and the DVD sound signal from DVD player, and then output them to each speaker. • It subjects to Centerpoint® processing.
WOOFER	• Outputs sound signal from BOSE amp. • Outputs low-pitched sound.
FRONT DOOR SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
TWEETER	• Outputs sound signal from BOSE amp. • Outputs high range sound.
REAR DOOR SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
CENTER SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
SEAT SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
REAR SURROUND SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.

Part name	Description
MULTIFUNCTION SWITCH	• Operation panel is equipped with the centralized switch where audio, auxiliary input and navigation operations are integrated. • The multifunction switch is connected via AV communication, and it transmits the operation signals of the multifunction switch and preset switch.
PRESET SWITCH	• Operation panel is equipped with the centralized switch where audio and air conditioner operations are integrated. • The preset switch is connected to the multifunction switch by hard-wire, and it transmits the operation signal to the multifunction switch.
STEERING SWITCH	• Each audio operation can be operated. • Steering switch signal (operation signal) is output to AV control unit.
MICROPHONE	• Used for hands-free phone operation and voice recognition. • Mic signal is transmitted to AV control unit. • Power (Mic. VCC) is supplied from AV control unit.
ANTENNA AMP.	• Radio signal received by glass antenna is amplified and transmitted to AV control unit. • Power (antenna amp ON signal) is supplied from AV control unit.
SATELLITE RADIO ANTENNA	Satellite radio wave is received and output to AV control unit.
iPod ADAPTER	• Inputs iPod sound signal from iPod®, and outputs iPod sound signal to AV control unit. • Receiving/transmitting of iPod® operation signals are performed as follows: - between AV control unit and iPod adapter: AV communication. - between iPod® and iPod adapter: serial communication.
REAR CONTROL SWITCH	• Operations for audio, etc. are possible. • The rear control switch is connected via AV communication, and it transmits the operation signals of the rear control switch.
MICROPHONE (for AudioPilot®)	• Used for AudioPilot®. • Mic signal is transmitted to BOSE amp.

HANDS-FREE PHONE SYSTEM

System Diagram

INFOID:0000000004155929



System Description

INFOID:0000000004155930

- AV control unit includes hands-free phone function.
- Hands-free communication can be operated by connecting using Bluetooth™ communication with cellular phone.
- Operation is performed by steering switch, and operating condition is indicated on front display.
- Guide sound that is heard during operation is input from AV control unit to BOSE amp., and is output from front speaker.

WHEN A CALL IS ORIGINATED

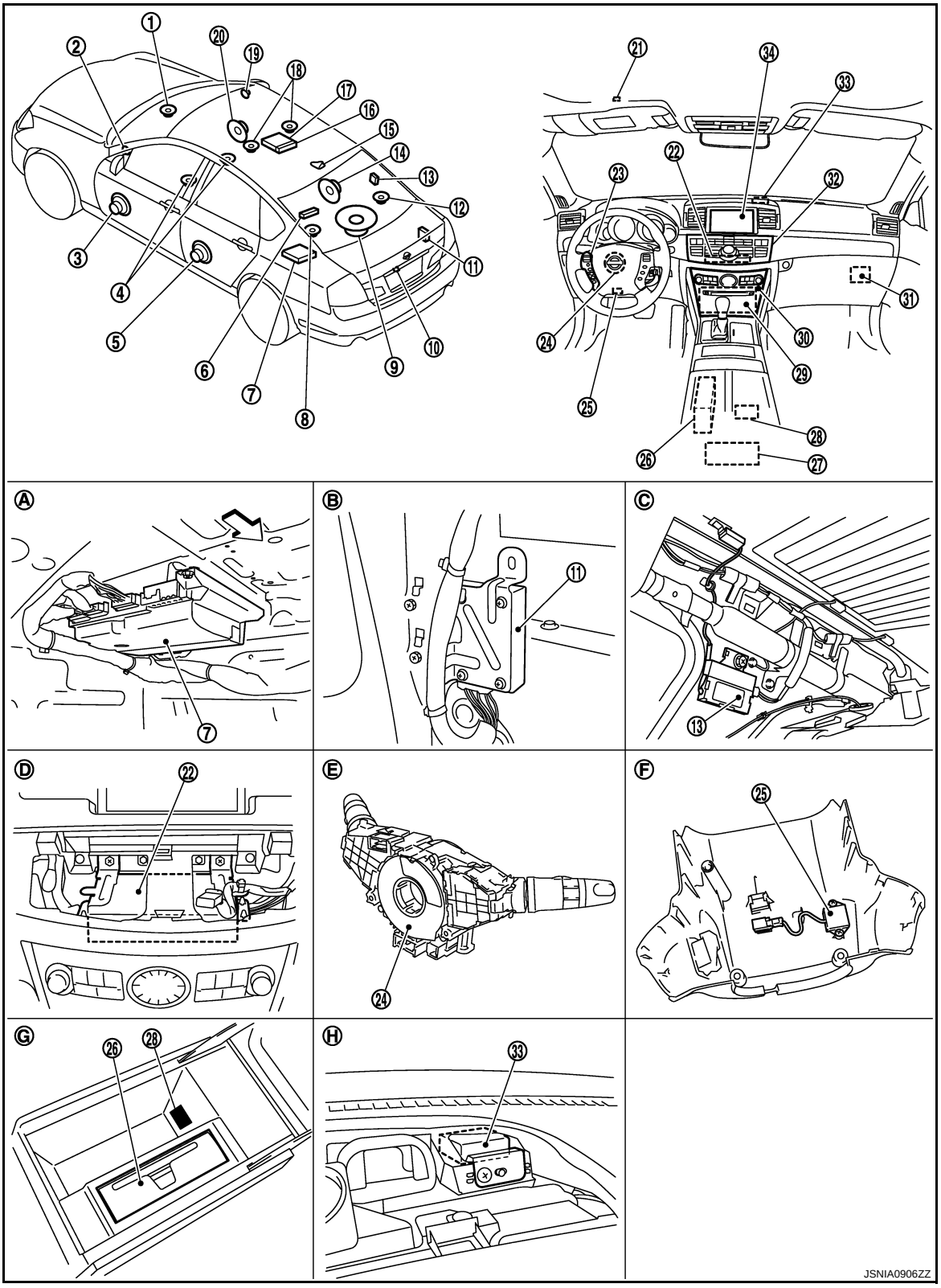
Spoken voice sound output from the microphone (MIC. signal) is input to AV control unit. AV control unit outputs to cellular phone with Bluetooth™ communication as a TEL voice signal. Voice sound is then heard at the other party.

WHEN RECEIVING A CALL

Voice sound is input to own cellular phone from the other party. TEL voice signal is output to front speaker, and the signal is input to BOSE amp. via AV control unit by establishing Bluetooth™ communication from cellular phone.

Component Parts Location

INFOID:0000000004155931



1. Center speaker
2. Tweeter LH
3. Front door speaker LH
4. Driver seat speaker
5. Rear door speaker LH
6. Rear control switch
7. BOSE amp.
8. Rear surround speaker LH
9. Woofer
10. Rear view camera
11. Camera control unit
12. Rear surround speaker RH

13.	Antenna amp.	14.	Rear door speaker RH	15.	Satellite radio antenna
16.	Headphone amp. & remote control receiver	17.	Rear display unit	18.	Passenger seat speaker
19.	Tweeter RH	20.	Front door speaker RH	21.	Microphone
22.	Video distributor	23.	Steering switch	24.	Steering angle sensor
25.	Microphone (for AudioPilot®)	26.	DVD player	27.	Auxiliary input jacks
28.	iPod connector	29.	AV control unit	30.	Preset switch
31.	iPod adapter	32.	Multifunction switch	33.	GPS antenna
34.	Front display unit				
A.	Under rear parcel LH side	B.	Trunk side finisher (RH) is removed	C.	Rear pillar finisher (RH) is removed
D.	Multifunction switch is removed	E.	Spiral cable part	F.	Steering column cover is removed
G.	In center console	H.	Center ventilator grille is removed		
⇨:	Vehicle front				

Component Description

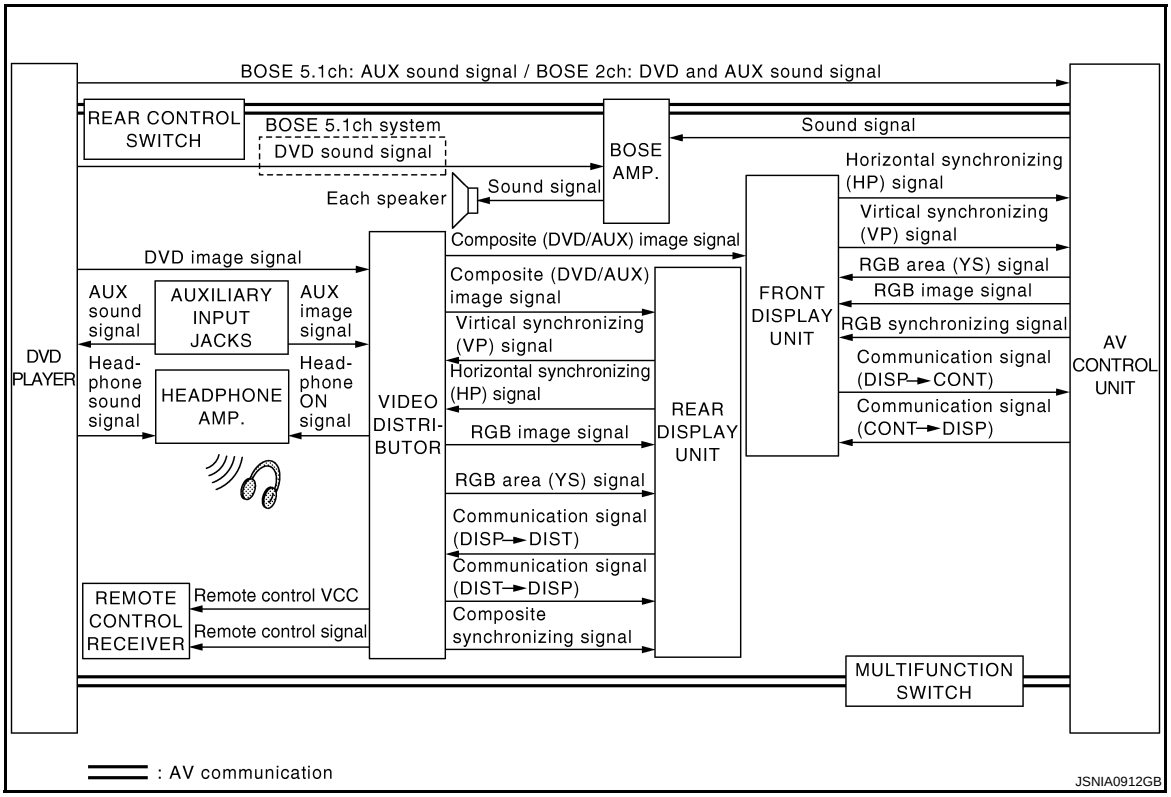
INFOID:0000000004155932

Part name	Description
AV CONTROL UNIT	• It includes the TEL adapter and Bluetooth™ function. • It outputs the TEL voice signal and voice guidance sound signal to the BOSE amp.
FRONT DISPLAY UNIT	• Display image is controlled by the serial communication from AV control unit. • Inputs RGB image signal (RGB, RGB area and RGB synchronizing) from AV control unit and displays the status of hands free phone system.
BOSE AMP.	Inputs TEL voice signal or voice guidance signal from AV control unit and outputs it to front speaker.
FRONT DOOR SPEAKER	Outputs the TEL voice signal or voice guidance signal from BOSE amp.
PRESET SWITCH	• Adjust the sound when using TEL. • The operation signal is transmitted to the AV control unit via AV communication.
STEERING SWITCH	• The hands free-phone system can be operated. • Steering switch signal (operation signal) is output to AV control unit.
MICROPHONE	• Uses when operating the hands-free phone. • Outputs Mic. signal (TEL voice signal) to the AV control unit. • The power (Mic. power supply) is supplied from the AV control unit.

MOBILE ENTERTAINMENT SYSTEM

System Diagram

INFOID:0000000004155933



System Description

INFOID:0000000004155934

The passengers can enjoy watching DVD in the rear seat with the rear display unit. They can also listen to a DVD and AUX in the rear seat independently by cordless headphones.

FUNCTION DESCRIPTION

Operating Signal

The mobile entertainment system can be controlled by the rear seat remote controller.
It receives the operation signal of the rear seat remote controller by the remote control receiver and rear display unit, and then transmits it to the video distributor.

Screen Rear Display

- Switching of display is performed with serial communication between rear display unit and video distributor.
- The rear display unit receives the DVD/AUX image signal and RGB image signal from the video distributor.

Screen Front Display

- Switching of display is performed with serial communication between front display unit and AV control unit.
- The front display unit receives the DVD/AUX image signal from the video distributor.
- The front display unit receives the RGB image signal from the AV control unit.

DVD Mode

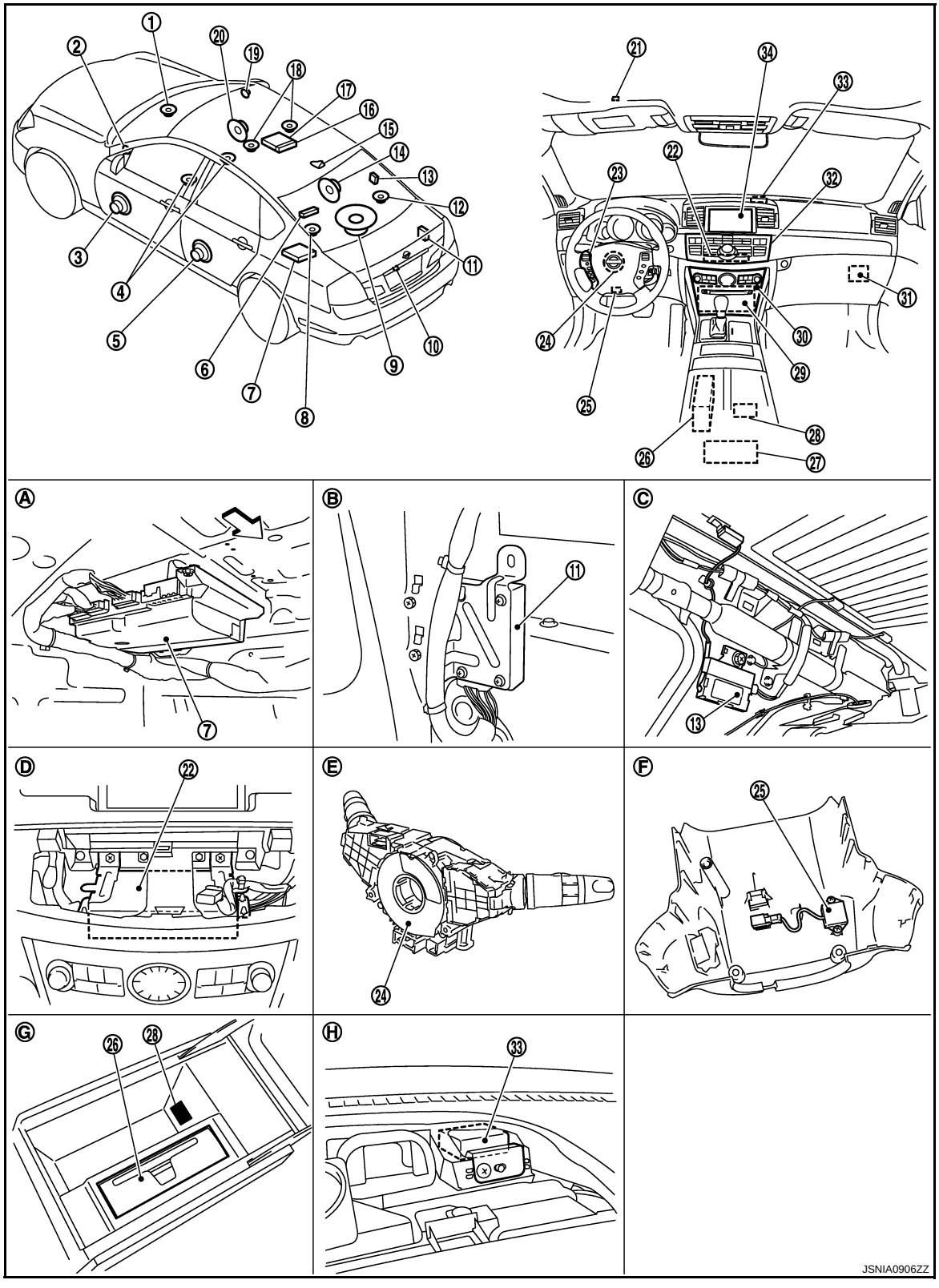
- The DVD player is connected to the AV control unit via AV communication and controlled by the AV control unit.
- The DVD player sound signal is output to the BOSE amp. The BOSE amp. outputs it to each speaker. (BOSE surround audio 5.1ch system models)
- The DVD player sound signal is output to the AV control unit. The AV control unit outputs DVD player sound signal to BOSE amp. The BOSE amp. outputs it to each speaker. (BOSE 2ch system models)
- The DVD image signal is output to the video distributor. The video distributor outputs it to front display unit and rear display unit.

AUX Mode

Refer to AV-518, "System Diagram".

Component Parts Location

INFOID:0000000004155935



1. Center speaker
2. Tweeter LH
3. Front door speaker LH
4. Driver seat speaker
5. Rear door speaker LH
6. Rear control switch
7. BOSE amp.
8. Rear surround speaker LH
9. Woofer
10. Rear view camera
11. Camera control unit
12. Rear surround speaker RH

13.	Antenna amp.	14.	Rear door speaker RH	15.	Satellite radio antenna
16.	Headphone amp. & remote control receiver	17.	Rear display unit	18.	Passenger seat speaker
19.	Tweeter RH	20.	Front door speaker RH	21.	Microphone
22.	Video distributor	23.	Steering switch	24.	Steering angle sensor
25.	Microphone (for AudioPilot®)	26.	DVD player	27.	Auxiliary input jacks
28.	iPod connector	29.	AV control unit	30.	Preset switch
31.	iPod adapter	32.	Multifunction switch	33.	GPS antenna
34.	Front display unit				
A.	Under rear parcel LH side	B.	Trunk side finisher (RH) is removed	C.	Rear pillar finisher (RH) is removed
D.	Multifunction switch is removed	E.	Spiral cable part	F.	Steering column cover is removed
G.	In center console	H.	Center ventilator grille is removed		
⇨:	Vehicle front				

Component Description

INFOID:0000000004155936

Part name	Description
VIDEO DISTRIBUTOR	• It receives the image signal from the DVD player, and auxiliary input jack, and then transmits it to the front display and rear display. • It supplies the power to the remote control receiver, and then receives the operation signal from the remote control receiver. • Composite synchronize signal is output to rear display unit. • It transmits ON signal to headphone amp. • Power (remote control receiver VCC) is transmitted to remote control receiver.
REAR DISPLAY UNIT	• Rear Display image is controlled by the serial communication from video distributor. • RGB image signal is input from video distributor (RGB image and RGB area). Composite image signal (DVD and auxiliary images) is input from the video distributor. • Synchronize signal (HP, VP) is output to video distributor.
BOSE AMP.	• It is connected via AV communication and controlled by the AV control unit. • It receives the voice guidance signal from AV control unit and output it to the front speaker. • It controls sound volume of each speaker when outputting TEL voice and voice guidance. • It subjects to AudioPilot® processing when receiving sound signal from microphone for AudioPilot®. BOSE 2ch system • It amplifies the sound signal from the AV control unit and output it to each speaker. BOSE surround audio 5.1ch system • It amplifies the sound signal from the AV control unit and the DVD sound signal from DVD player, and then output them to each speaker. • It subjects to Centerpoint® processing.
DVD PLAYER	• It transmits the playback DVD image signal to the video distributor. It also transmits the input AUX sound signal to the AV control unit. BOSE 2ch system • It transmits the playback DVD sound signal to the AV control unit. BOSE surround audio 5.1ch system • It transmits the playback DVD sound signal to the BOSE amp.
REMOTE CONTROL RECEIVER	• The power is supplied from the video distributor. • It receives the operation signal of the remote controller, and then transmits the operation signal to the video distributor.
HEADPHONE AMP.	• It receives the DVD/AUX sound signal from the DVD player, and then transmits it to the headphones. • It operates by receiving the headphone ON signal from the video distributor.
WOOFER	• Outputs sound signal from BOSE amp. • Outputs low-pitched sound.

Part name	Description
FRONT DOOR SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
TWEETER	• Outputs sound signal from BOSE amp. • Outputs high range sound.
REAR DOOR SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
CENTER SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
SEAT SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
REAR SURROUND SPEAKER	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Diagnosis Description

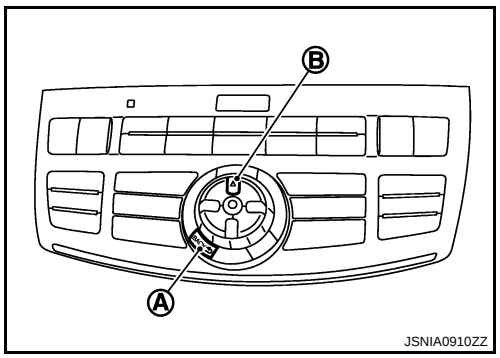
INFOID:0000000004155937

MULTIFUNCTION SWITCH AND PRESET SWITCH SELF-DIAGNOSIS FUNCTION

The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

Self-Diagnosis Mode

- Press the “BACK (A)” switch and the “▲ (B)” switch of the 8-direction switches within 10 seconds after turning the ignition switch from OFF to ACC and hold them for 3 seconds or more. Then the buzzer sounds, all indicators of the preset switch illuminate, and the self-diagnosis mode starts.
- The continuity of each switch at the ON position can be checked by pressing the switch. The buzzer sounds if the switch is normal.
  NOTE:
  The hazard switch and CD eject switch cannot be checked.



Finishing Self-Diagnosis Mode

Self-diagnosis mode is canceled when turning the ignition switch OFF.

MULTI AV SYSTEM ON BOARD DIAGNOSIS FUNCTION

- The AV control unit diagnosis function starts up with multifunction switch operation and the AV control unit performs a diagnosis for each unit in the system during the on board diagnosis.
- Perform a CONSULT-III diagnosis if the on board diagnosis does not start, e.g., the screen does not display anything, the multifunction switch does not function, etc.

ON BOARD DIAGNOSIS

Description

- The trouble diagnosis function has a self-diagnosis mode for conducting trouble diagnosis automatically and a confirmation/adjustment mode for operating manually.
- The self-diagnosis mode performs diagnoses on the AV control unit, connections between system components as well as connections between AV control unit and GPS antenna and between AV control unit and satellite radio antenna. Then it displays the diagnosis results on the display.
- The confirmation/adjustment mode allows the technician to check, modify or adjust the vehicle signals and set values, as well as to monitor the system error records and system communication status. The checking, modifying or adjusting generally require human intervention and judgment (the system cannot make judgment automatically).

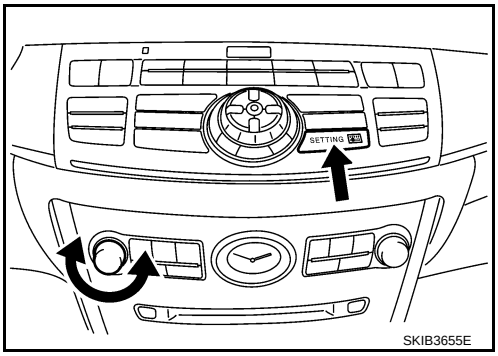
On Board Diagnosis Item

Mode	Description
Self-Diagnosis	• AV control unit diagnosis • Diagnoses the connections across system components, between AV control unit and GPS antenna and between AV control unit and satellite radio antenna.

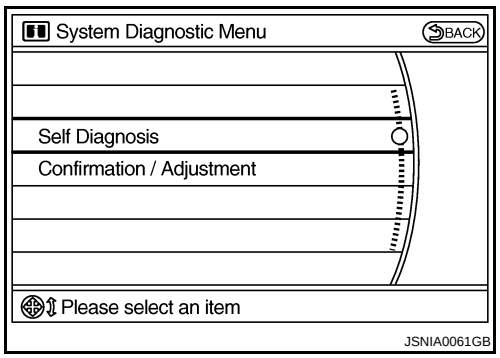
Mode			Description
Confirmation/ Adjustment	Display Diagnosis		The following check functions are available: color tone check by color bar display, light and shade check by gray scale display and touch panel calibration response check.
	Vehicle Signals		Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition switch, and reverse.
	Speaker Test		The connection of a speaker can be confirmed by test tone.
	Climate Control		Start auto air conditioner system self-diagnosis.
	Navigation	Steering Angle Adjustment	When there is a difference between the actual turning angle and the vehicle mark turning angle, it can be adjusted.
		Speed Calibration	When there is a difference between the current location mark and the actual location, it can be adjusted.
		XM SAT Subscription Status	The XM NavTraffic subscription status can be checked.
	Error History		The system malfunction and the frequency when occurring in the past are displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.
	Vehicle CAN Diagnosis		The transmitting/receiving of CAN communication can be monitored.
	AV COMM Diagnosis		The communication condition of each unit of Multi AV system can be monitored.
	Handsfree Phone		The received volume adjustment of hands-free phone, microphone speaker check, and erase memory can be performed.
	Camera Cont.		The signal connected to camera control unit can be checked and the guiding line position that overlaps rear view camera image can be adjusted.
	Bluetooth		The passkey and the device name can be checked and changed.
	SAT	Change Channel	Any necessary channels required to receive traffic information from the satellite radio system can be set.
		Change Application ID	Any application ID's required to receive traffic information from the satellite radio system can be set.
		Diag	Not used.
	Delete Unit Connection Log		Erase the connection history of unit and error history.
	Initialize Settings		Initializes the AV control unit memory.

STARTING PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “SETTING” button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   - Shifting from current screen to previous screen is performed by pressing “BACK” button.



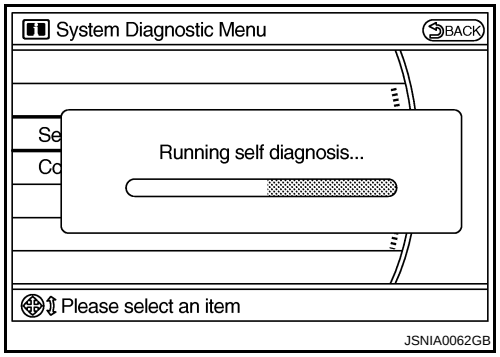
4. The trouble diagnosis initial screen is displayed, and then the items of “Self Diagnosis” and “Confirmation/Adjustment” can be selected.



SELF-DIAGNOSIS MODE

1. Start the self-diagnosis function and select “Self Diagnosis”.

- Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
- The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.



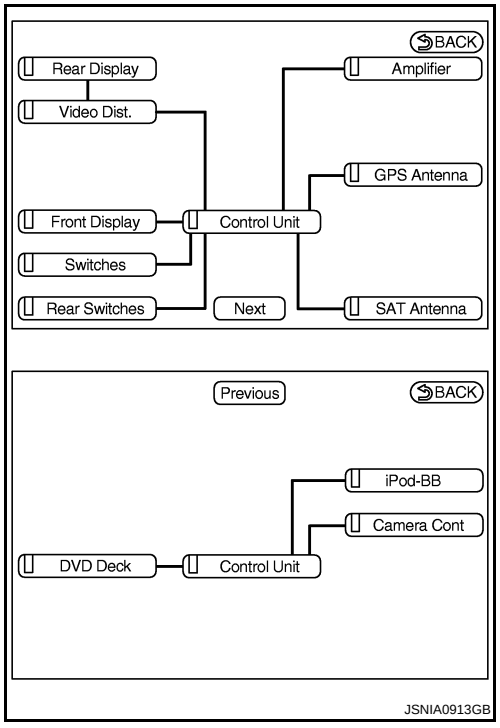
2. Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.

Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction Note	Red	Green

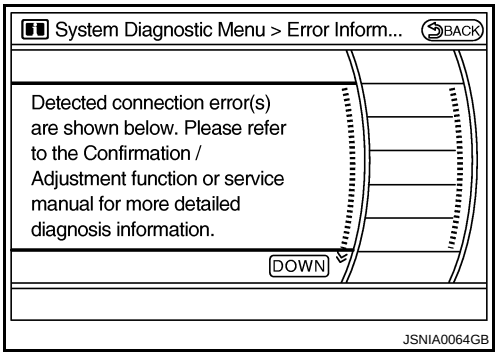
NOTE:

- Only the control unit (AV control unit) is displayed in red.
- Replace AV control unit if “Self-Diagnosis did not run because of a control unit malfunction” is indicated. The symptom is AV control unit internal error. Refer to AV-1064, "Exploded View".

- If multiple errors occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > gray.



- The comments of the self-diagnosis results can be viewed with a component in the diagnosis result screen.



SELF-DIAGNOSIS RESULTS

Check the applicable display at the following table, and then repair the malfunctioning parts.

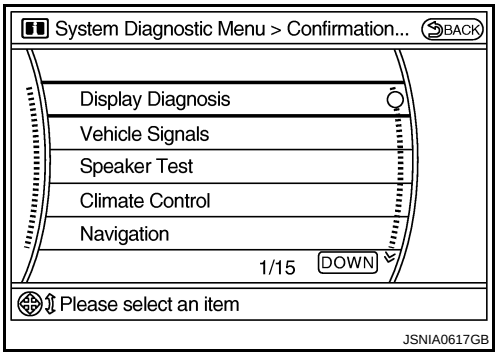
Diagnosis results	Detection logic	Possible malfunction location / Action to take
Control unit • unit: red **NOTE:** When a control unit malfunction is detected (red in unit display), connection malfunctions with other connection unit may be displayed.	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.
"Self-Diagnosis did not run because of a control unit malfunction"		
Front Display • unit: gray • connection line: yellow	When either one of the following items is detected: • serial communication circuits between AV control unit and front display unit are malfunctioning. • serial communication signal between AV control unit and front display unit is malfunctioning.	Serial communication circuits between AV control unit and front display unit.
Rear Display • unit: gray • connection line: yellow	When either one of the following items is detected: • rear display unit power supply and ground circuits are malfunctioning. • serial communication circuits between video distributor and rear display unit are malfunctioning. • serial communication signal between video distributor and rear display unit is malfunctioning.	• Rear display power supply and ground circuits. • Serial communication circuits between video distributor and rear display unit.
DVD Deck • unit: gray • connection line: yellow	When either one of the following items is detected: • DVD player power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and DVD player is malfunctioning.	DVD player power supply and ground circuits.
Rear Switches • unit: gray • connection line: yellow	When either one of the following items is detected: • rear control switch power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and rear control switch is malfunctioning.	Rear control switch power supply and ground circuits.

Diagnosis results	Detection logic	Possible malfunction location / Action to take
Amplifier • unit: gray • connection line: yellow	When either one of the following items is detected: • BOSE amp. power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and BOSE amp. is malfunctioning.	BOSE amp. power supply and ground circuits.
Camera Cont. • unit: gray • connection line: yellow	Malfunction is detected in Camera-connection recognition signal circuit.	Camera connection recognition signal circuit.
iPod-BB • unit: gray • connection line: yellow	When either one of the following items is detected: • iPod adapter power supply and ground circuits are malfunctioning. • AV communication circuits between camera control unit and iPod adapter are malfunctioning. • AV communication circuits between BOSE amp. and camera control unit are malfunctioning. • AV communication signal between AV control unit and iPod adapter is malfunctioning.	• iPod adapter power supply and ground circuits. • AV communication circuits between BOSE amp. and camera control unit. • AV communication circuits between camera control unit and iPod adapter.
GPS Antenna • unit: gray • connection line: yellow	GPS antenna connection malfunction is detected.	GPS antenna.
SAT Antenna • unit: gray • connection line: yellow	Satellite radio antenna connection malfunction is detected.	• Satellite radio antenna feeder. • Satellite radio antenna.
Video Dist. and Rear Display • Video Dist. - unit: gray - connection line: yellow • Rear Display - unit: gray - connection line: gray	Malfunction is detected in video distributor power supply and ground circuits.	Video distributor power supply and ground circuits.
Amplifier and iPod-BB • unit: gray • connection line: yellow	When either one of the following items is detected: • AV communication circuits between DVD player and BOSE amp. are malfunctioning. (without rear control switch models) • AV communication circuits between rear control switch and BOSE amp. are malfunctioning. (with rear control switch models)	• AV communication circuits between DVD player and BOSE amp. (without rear control switch models) • AV communication circuits between rear control switch and BOSE amp. (with rear control switch models)
Amplifier, iPod-BB and Rear Switches • unit: gray • connection line: yellow	Malfunction is detected in AV communication circuits between DVD player and rear control switch.	AV communication circuits between DVD player and rear control switch.
Amplifier, iPod-BB, and DVD Deck • unit: gray • connection line: yellow	Malfunction is detected in AV communication circuits between video distributor and DVD player.	AV communication circuits between video distributor and DVD player.
Amplifier, iPod-BB, Rear Switches and DVD Deck • unit: gray • connection line: yellow		

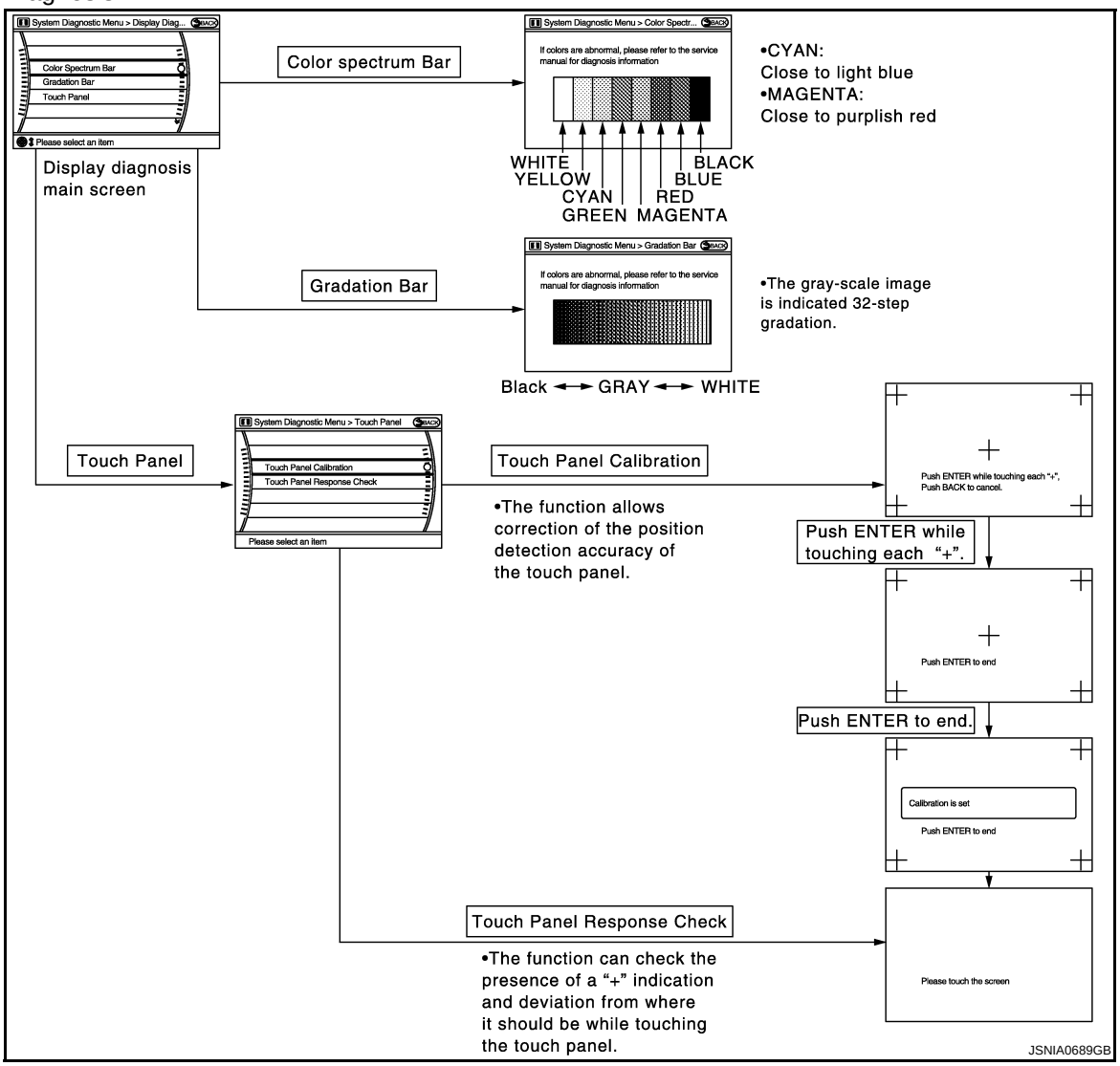
Diagnosis results	Detection logic	Possible malfunction location / Action to take
Amplifier, iPod-BB, DVD Deck and Video Dist. • unit: gray • connection line: yellow Rear Display • unit: gray • connection line: gray	Malfunction is detected in AV communication circuits between multifunction switch and video distributor.	AV communication circuits between multifunction switch and video distributor.
Amplifier, iPod-BB, Rear Switches, DVD Deck and Video Dist. • unit: gray • connection line: yellow Rear Display • unit: gray • connection line: gray		

CONFIRMATION/ADJUSTMENT MODE

1. Start the diagnosis function and select “Confirmation/Adjustment”. The confirmation/adjustment mode indicates where each item can be checked or adjusted.
2. Select each switch on the “Confirmation/Adjustment Mode” screen to display the relevant trouble diagnosis screen. Press the “BACK” switch to return to the initial Confirmation/Adjustment Mode screen.



Display Diagnosis

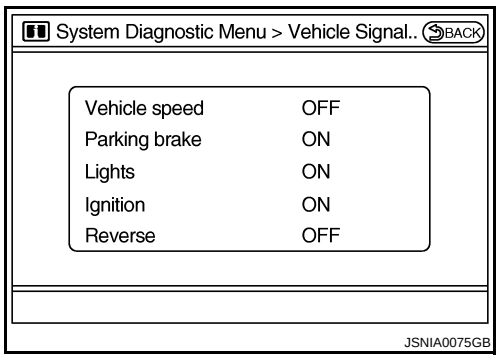


The tint of the color bar indication is as per the following list if RGB signal error is detected.

R (red) signal error : Light blue (Cyan) tint
G (green) signal error : Purple (Magenta) tint
B (blue) signal error : Yellow tint

Vehicle Signals

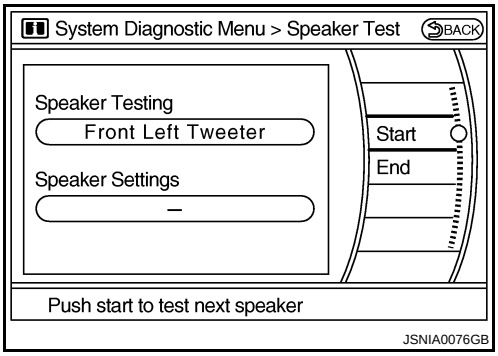
A comparison check can be made of each actual vehicle signal and the signals recognized by the system.



Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Parking brake	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Lights	ON	Light switch ON.	—
	OFF	Light switch OFF.	
Ignition	ON	Ignition switch ON.	—
	OFF	Ignition switch in ACC position.	
Reverse	ON	Shift the selector lever to “R” position.	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever other than “R” position.	

Speaker Test

Select “SPEAKER DIAGNOSIS” to display the Speaker Diagnosis screen. Press “START and NEXT” to generate a test tone in a speaker. Press “Start” to generate a test tone in the next speaker. Press “End” to stop the test tones.



NOTE:

The frequency of test tone emitted from each speaker is as follows.

Tweeter	**: 3 kHz**
Front door speaker	**: 300 Hz**
Rear door speaker	**: 1 kHz**
Rear surround speaker	**: 1 kHz**
Center speaker	**: 1 kHz**
Woofer	**: 100 Hz**
Seat speaker	**: 1 kHz**

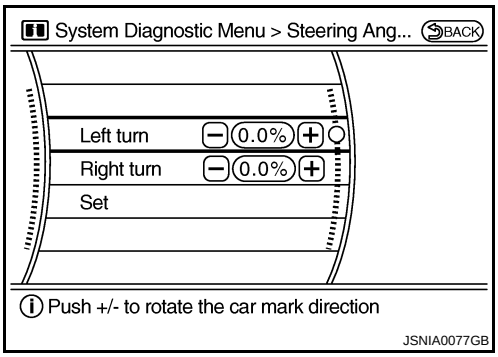
Climate Control

Refer to “HEATER & AIR CONDITIONING CONTROL SYSTEM” for details.

Navigation

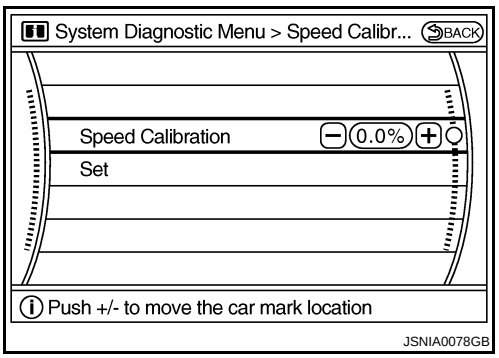
STEERING ANGLE ADJUSTMENT

The steering angle output value detected with the gyroscope is adjusted.



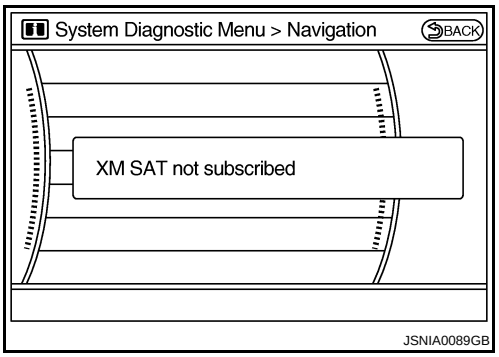
SPEED CALIBRATION

During normal driving, distance error caused by tire wear and tire pressure change is automatically adjusted for by the automatic distance correction function. This function, on the other hand, is for immediate adjustment, in cases such as driving with tire chain fitted on tires.



XM SAT SUBSCRIPTION STATUS

The XM NavTraffic subscription status can be checked.



Error History

The self-diagnosis results are judged depending on whether any error occurs from when “Self-diagnosis” is selected until the self-diagnosis results are displayed.

However, the diagnosis results are judged normal if an error has occurred before the ignition SW is turned ON and then no error has occurred until the self-diagnosis start. Check the “Error Record” to detect any error that may have occurred before the self-diagnosis start because of this situation.

The error record displays the time and place of the most recent occurrence of that error. However, take note of the following points.

- If there is a malfunction with the GPS antenna circuit board in the AV control unit, the correct date and time of occurrence may not be able to be displayed.
- Place of the error occurrence is represented by the position of the current location mark at the time an error occurred. If current location mark has deviated from the correct position, then the place of the error occurrence cannot be located correctly.
- The frequency of occurrence is displayed in a count up manner. The actual count up method differs depending on the error item.

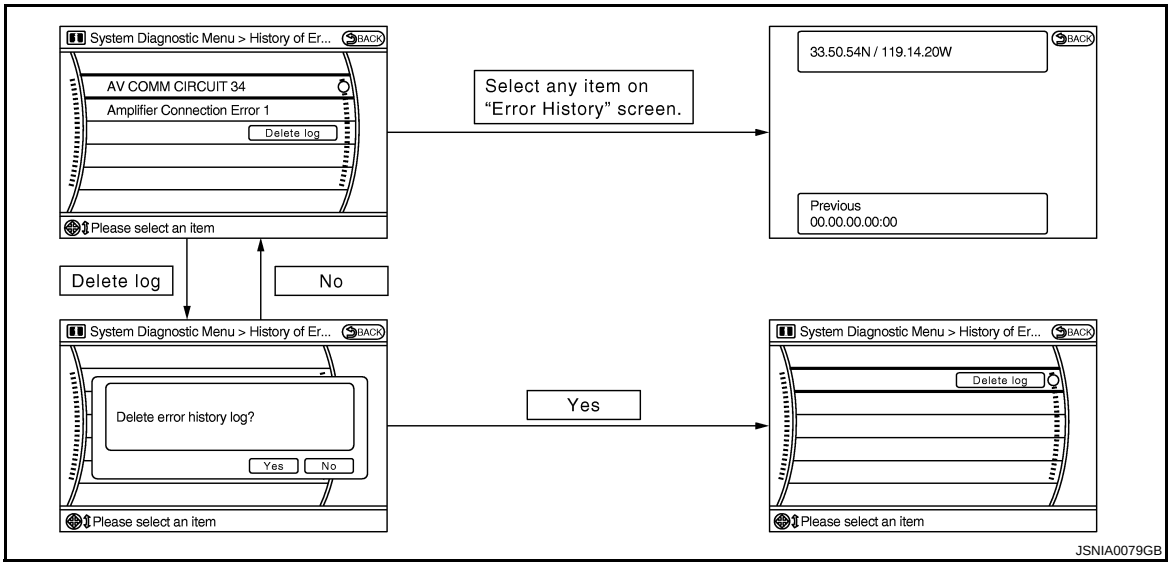
Count up method A

- The counter resets to 0 if an error occurs when IGN switch is turned ON. The counter increases by 1 if the condition is normal at a next IGN ON cycle.
- The counter upper limit is 39. Any counts exceeding 39 are ignored.“ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Count up method B

- The counter increases by 1 if an error occurs when IGN switch is ON. The counter will not decrease even if the condition is normal at the next IGN ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. “ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Display type of occurrence frequency	Error history display item
Count up method A	CAN communication line, control unit (CAN), AV communication line, control unit (AV communication)
Count up method B	Other than the above



Error item

Some error items may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-565, "Diagnosis Procedure".
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Replace the AV control unit.
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit	AV control unit malfunction is detected.	
Connection Of Gyro		
XM SERIAL COMM Error		
CAN Controller Memory Error		
Bluetooth Module Connection Error		
HDD CONN Error		
HDD READ Error		
HDD WRITE Error		
HDD COMM Error		
HDD ACCESS Error		
DSP CONN Error		
DSP COMM Error		
Internal Communication Error	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.
GPS Communication Error	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.
GPS ROM Error		
GPS RAM Error		
GPS RTC Error		

Error item	Description	Possible malfunction factor/Action to take
Front Display Connection Error	When either one of the following items is detected: • front display unit power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and front display unit are malfunctioning. • serial communication signal between AV control unit and front display unit is malfunctioning.	• Front display unit power supply and ground circuits. • Serial communication circuits between AV control unit and front display unit.
GPS Antenna Error	GPS antenna connection malfunction is detected.	GPS antenna.
Rear Display Connection Error	When either one of the following items is detected: • rear display unit power supply and ground circuits are malfunctioning. • serial communication circuits between video distributor and rear display unit are malfunctioning. • serial communication signal between video distributor and rear display unit is malfunctioning.	• Rear display unit power supply and ground circuits. • Serial communication circuits between video distributor and rear display unit.
Camera Control Unit Connection Error	Malfunction is detected in camera connection recognition circuit between AV control unit and camera control unit.	Camera-connection recognition circuit between AV control unit and camera control unit.
XM Antenna Connection Error	Satellite radio antenna connection malfunction is detected.	• Satellite radio antenna feeder. • Satellite radio antenna.
• AV COMM CIRCUIT • Internal Communication Error	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.
• AV COMM CIRCUIT • Switches Connection Error	When either one of the following items is detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and multifunction switch is malfunctioning.	Multifunction switch power supply and ground circuits.
• AV COMM CIRCUIT • Rear SW Connection Error	When either one of the following items is detected: • Rear control switch power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and rear control switch is malfunctioning.	Rear control switch power supply and ground circuits.
• AV COMM CIRCUIT • Video Distributor Connection Error	When either one of the following items is detected: • video distributor power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and video distributor is malfunctioning.	Video distributor power supply and ground circuits.
• AV COMM CIRCUIT • DVD Deck Connection Error	When either one of the following items is detected: • DVD player power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and DVD player is malfunctioning.	DVD player power supply and ground circuits.

Error item	Description	Possible malfunction factor/Action to take
• AV COMM CIRCUIT • Amplifier Connection Error	When either one of the following items is detected: • BOSE amp. power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and BOSE amp. is malfunctioning.	BOSE amp. power supply and ground circuits.
• AV COMM CIRCUIT • Rearview Camera Connection Error	When either one of the following items is detected: • camera control unit power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and camera control unit is malfunctioning.	Camera control unit power supply and ground circuits.
• AV COMM CIRCUIT • iPod Connection Error	When either one of the following items is detected: • iPod adapter power supply and ground circuits are malfunctioning. • AV communication circuits between camera control unit and iPod adapter are malfunctioning. • AV communication signal between AV control unit and iPod adapter is malfunctioning.	• iPod adapter power supply and ground circuits. • AV communication circuits between camera control unit and iPod adapter.
• AV COMM CIRCUIT • Rearview Camera Connection Error • iPod Connection Error	Malfunction is detected in AV communication circuits between BOSE amp. and camera control unit.	AV communication circuits between BOSE amp. and camera control unit.
• AV COMM CIRCUIT • Amplifier Connection Error • Rearview Camera Connection Error • iPod Connection Error	When either one of the following items is detected: • AV communication circuits between DVD player and BOSE amp. are malfunctioning. (without rear control switch models) • AV communication circuits between rear control switch and BOSE amp. are malfunctioning. (with rear control switch models)	• AV communication circuits between DVD player and BOSE amp. (without rear control switch models) • AV communication circuits between rear control switch and BOSE amp.
• AV COMM CIRCUIT • Rear SW Connection Error • Amplifier Connection Error • Rearview Camera Connection Error • iPod Connection Error	Malfunction is detected in AV communication circuits between DVD player and rear control switch.	AV communication circuits between DVD player and rear control switch.
• AV COMM CIRCUIT • Rear SW Connection Error* • DVD Deck Connection Error • Amplifier Connection Error • Rearview Camera Connection Error • iPod Connection Error	Malfunction is detected in AV communication circuits between video distributor and DVD player.	AV communication circuits between video distributor and DVD player.
• AV COMM CIRCUIT • Rear SW Connection Error* • Video Distributor Connection Error • DVD Deck Connection Error • Amplifier Connection Error • Rearview Camera Connection Error • iPod Connection Error	Malfunction is detected in AV communication circuits between multifunction switch and video distributor.	AV communication circuits between multifunction switch and video distributor.

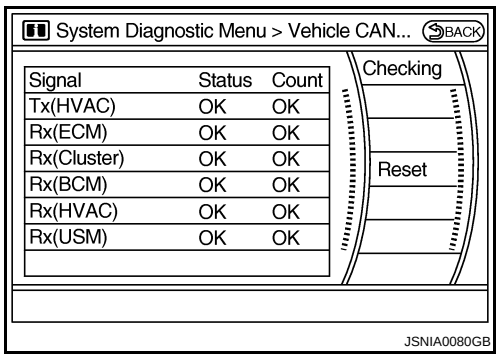
Error item	Description	Possible malfunction factor/Action to take
• AV COMM CIRCUIT • Rear SW Connection Error* • Switches Connection Error • Video Distributor Connection Error • DVD Deck Connection Error • Amplifier Connection Error • Rearview Camera Connection Error • iPod Connection Error	Malfunction is detected in AV communication circuits between AV control unit and multifunction switch.	AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT • Rear SW Connection Error* • Internal Communication Error • Switches Connection Error • Video Distributor Connection Error • DVD Deck Connection Error • Amplifier Connection Error • Rearview Camera Connection Error • iPod Connection Error	Malfunction is detected in AV communication circuits.	Check and repair the short circuit in AV communication circuits.

NOTE:

*: non-equipped item is not displayed.

Vehicle CAN Diagnosis

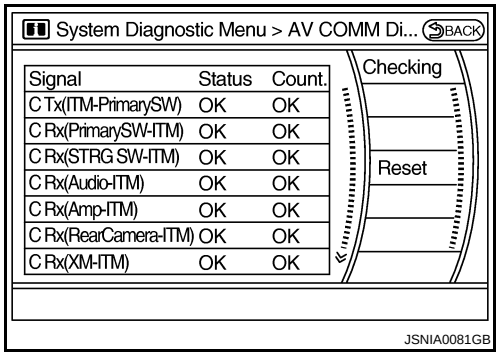
- CAN communication status and error counter is displayed.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.



Items	Display (Current)	Malfunction counter (Past)
Tx (HVAC)	OK / UNKWN	OK / 0 – 39
Rx (ECM)	OK / UNKWN	OK / 0 – 39
Rx (Cluster)	OK / UNKWN	OK / 0 – 39
Rx (BCM)	OK / UNKWN	OK / 0 – 39
Rx (HVAC)	OK / UNKWN	OK / 0 – 39
Rx (USM)	OK / UNKWN	OK / 0 – 39
Rx (TPMS)	OK / UNKWN	OK / 0 – 39
Rx (STRG)	OK / UNKWN	OK / 0 – 39

AV COMM Diagnosis

- Displays the communication status between AV control unit (master unit) and each unit.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.



Items	Status (Current)	Counter (Past)
C Tx(ITM–PrimarySW)	OK / UNKWN	OK / 0 – 39
C Rx(PrimarySW–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(STRG SW–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(RrSeatSW–ITM)	OK / UNKWN	OK / 0 – 39
C Rx (Audio–ITM)	OK / UNKWN	OK / 0 – 39

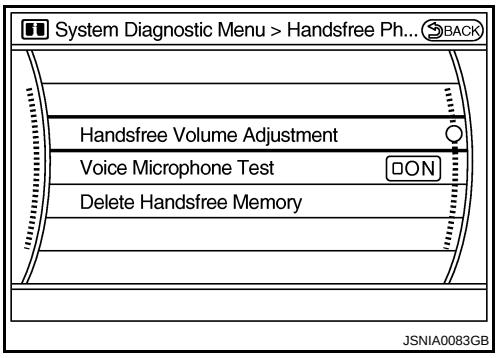
Items	Status (Current)	Counter (Past)
C Rx(Amp–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(RearCamera–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(DVD–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(XM–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(iPod–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(Video Dist–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(Remote Cont–ITM)	OK / UNKWN	OK / 0 – 39
C Rx(Amp–Audio)	OK / UNKWN	OK / 0 – 39
C Rx(DVD–Audio)	OK / UNKWN	OK / 0 – 39
C Rx(iPod–Audio)	OK / UNKWN	OK / 0 – 39
C Tx(Audio–ITM)	OK / UNKWN	OK / 0 – 39

NOTE:

- Any units with "—" displayed have no history of vehicle connection.
- "STRG SW", "Amp""XM" indicate the same status as "Audio".

Hands-Free Phone

The hands-free phone reception volume adjustment, microphone and speaker test, and memory erase functions are also available.

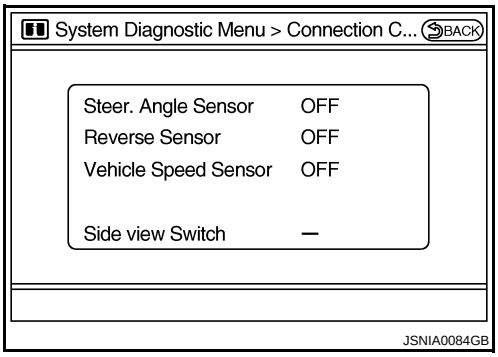


Camera Cont.

The two functions of "Connection Confirmation" and "Adjust Offset of Rear View Camera" are available.

CONNECTION CONFIRMATION

The steering angle sensor, reverse signal and vehicle speed sensor can be inspected.

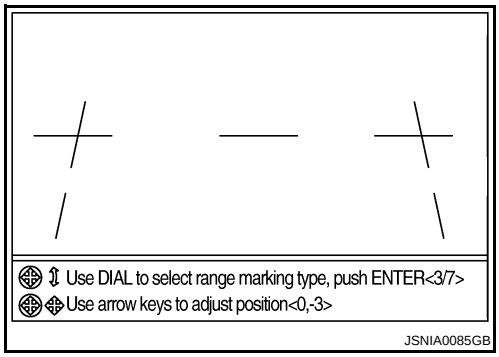


Diagnosis item	Display	Vehicle status
Steer. Angle Sensor	ON	When steering the vehicle with ignition switch ON (remains ON until connection mode is stopped when it is turned ON).
	OFF	• Ignition switch at ACC. • No steering with ignition switch ON.
	—	Malfunction detected in camera connection recognition signal.

Diagnosis item	Display	Vehicle status
Reverse Sensor	ON	Selector lever is in “R” with ignition switch ON.
	OFF	• Ignition switch at ACC. • Selector lever is in position other than “R” with ignition switch ON.
	—	Malfunction detected in camera-connection recognition signal.
Vehicle Speed Sensor	ON	Vehicle speed is more than 0 km/h (0 MPH) with ignition switch ON.
	OFF	• Ignition switch at ACC. • Vehicle speed is 0 km/h (0 MPH) with ignition switch ON.
	—	Malfunction detected in camera connection recognition signal.
Side view Switch	—	Not used.

ADJUST OFFSET OF REAR VIEW CAMERA

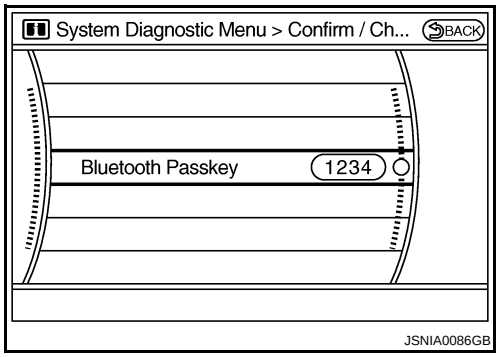
Use this mode to adjust the guide line display position of the rear-view monitor if necessary after removing the rear view monitor camera.



Bluetooth

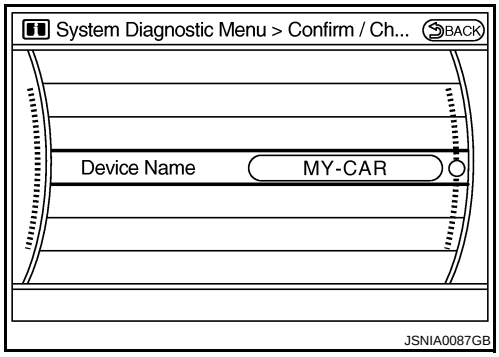
Confirm / Change Passkey

- The passkey of Bluetooth can be confirmed and changed.
- The passkey can be changed by four digits within 0 to 9.



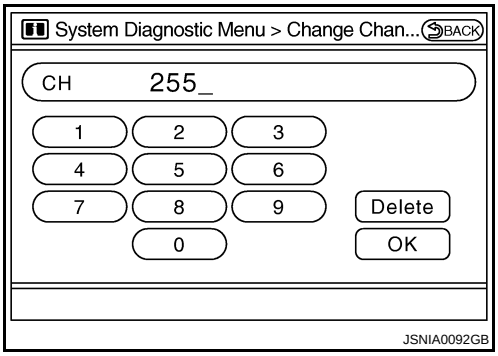
Confirm / Change Device Name

- The device name of Bluetooth can be confirmed and changed.
- The device name can be changed by sixteen digits within A to Z (small character can be used) and - (hyphen).

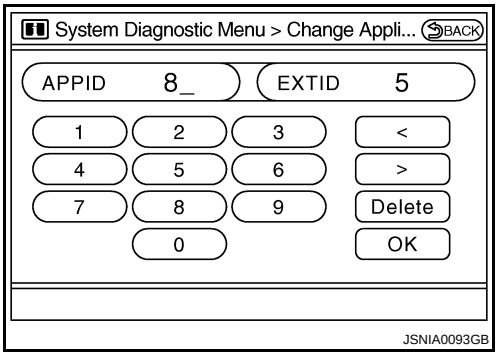


SAT

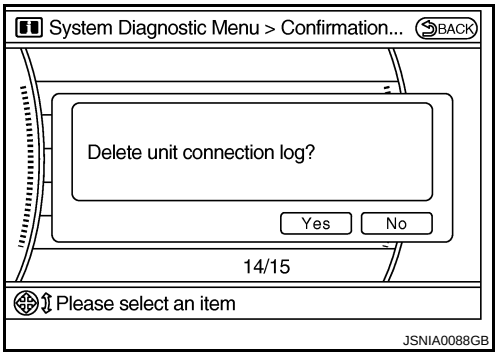
• Change Channel
- Any necessary channels required to receive traffic information from the satellite radio system can be set.



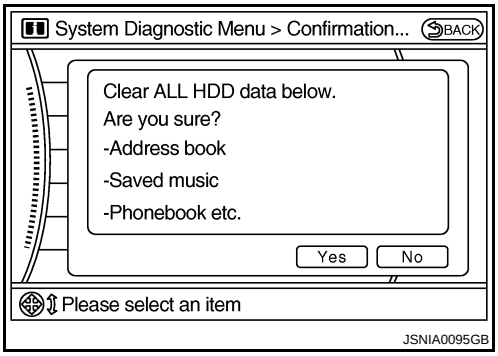
• Change Application ID
- Any application ID'-s required to receive traffic information from the satellite radio system can be set.



Delete Unit Connection Log
Deletes any unit connection records and error records from the AV control unit memory. (Clear the records of the unit that has been removed.)



Initialize Settings
Deletes data stored in HDD.



CONSULT-III Function (MULTI AV)

INFOID:0000000004155938

CONSULT-III FUNCTIONS

CONSULT-III performs the following functions via the communication with the AV control unit.

Diagnosis mode	Description
Ecu Identification	The part number of AV control unit can be checked.
Self Diagnostic Result	Performs a diagnosis on the AV control unit and a connection diagnosis for the communication circuit of the Multi AV system, and displays the current and past malfunctions collectively.
Data Monitor	The diagnosis of vehicle signal that is input to the AV control unit can be performed.

AV COMMUNICATION

When “AV communication” of “CAN Diag Support Monitor” is selected, the following function will be performed.

AV communication	AV&NAVI C/U	Displays the communication status from AV control unit to each unit as well as the error counter.
	AUDIO	Displays the AV control unit communication status and the error counter.

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSIS RESULT

- In CONSULT-III self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates “CRNT”. The past malfunction indicates “PAST”.
- The timing is displayed as “0” if any of the error codes [U1000], [U1010], [U1300] and [U1310] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

Self-diagnosis results display item

Error item	Detection logic	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-565, "Diagnosis Procedure".
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit.
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	
Control Unit FLASH-ROM [U1200]	AV control unit malfunction is detected.	
Gyro NO CONN [U1201]		
CAN CONT [U1216]		
BLUETOOTH CONN [U1217]		
HDD-CONN [U1218]		
HDD-READ [U1219]		
XM SERIAL COMM [U1220]		
HDD-WRITE [U121A]		
HDD-COMM [U121B]		
HDD-ACCESS [U121C]		
DSP CONN [U121D]		
DSP COMM [U121E]		
INTERNAL COMM [U121F]	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.
GPS COMM [U1204]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.
GPS ROM [U1205]		
GPS RAM [U1206]		
GPS RTC [U1207]		

Error item	Detection logic	Possible malfunction factor/Action to take
FRONT DISP CONN [U1243]	When either one of the following items is detected: • front display unit power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and front display unit are malfunctioning. • serial communication signal between AV control unit and front display unit is malfunctioning.	• Front display unit power supply and ground circuits. • Serial communication circuits between AV control unit and front display unit.
GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	GPS antenna.
REAR DISP CONN [U1247]	When either one of the following items is detected: • rear display unit power supply and ground circuits are malfunctioning. • serial communication circuits between video distributor and rear display unit are malfunctioning. • serial communication signal between video distributor and rear display unit is malfunctioning.	• Rear display unit power supply and ground circuits. • Serial communication circuits between video distributor and rear display unit.
CAMERA CONT CONN [U1250]	Malfunction is detected in camera connection recognition circuit between AV control unit and camera control unit.	Camera-connection recognition circuit between AV control unit and camera control unit.
XM ANTENNA CONN [U1258]	Satellite radio antenna connection malfunction is detected.	• Satellite radio antenna feeder. • Satellite radio antenna.
AV COMM CIRCUIT [U1300]	When either one of the following items is detected: • Rear control switch power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and rear control switch is malfunctioning.	Rear control switch power supply and ground circuits.
• AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F]	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items is detected: • Multifunction switch power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and multifunction switch is malfunctioning.	Multifunction switch power supply and ground circuits.
• AV COMM CIRCUIT [U1300] • VIDEO DIST CONN [U1246]	When either one of the following items is detected: • Video distributor power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and video distributor is malfunctioning.	Video distributor power supply and ground circuits.
• AV COMM CIRCUIT [U1300] • DVD DECK CONN [U1248]	When either one of the following items is detected: • DVD player power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and DVD player is malfunctioning.	DVD player power supply and ground circuits.

Error item	Detection logic	Possible malfunction factor/Action to take
• AV COMM CIRCUIT [U1300] • AMP CONN [U124E]	When either one of the following items is detected: • BOSE amp. power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and BOSE amp is malfunctioning.	BOSE amp. power supply and ground circuits.
• AV COMM CIRCUIT [U1300] • REAR CAMERA LAN CONN [U1252]	When either one of the following items is detected: • camera control unit power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and camera control unit is malfunctioning.	Camera control unit power supply and ground circuits.
• AV COMM CIRCUIT [U1300] • IPod CONN [U1254]	When either one of the following items is detected: • iPod adapter power supply and ground circuits are malfunctioning. • AV communication circuits between camera control unit and iPod adapter are malfunctioning. • AV communication signal between AV control unit and iPod adapter is malfunctioning.	• iPod adapter power supply and ground circuits. • AV communication circuits between camera control unit and iPod adapter.
• AV COMM CIRCUIT [U1300] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits between BOSE amp. and camera control unit.	AV communication circuits between BOSE amp. and camera control unit.
• AV COMM CIRCUIT [U1300] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	When either one of the following items is detected: • AV communication circuits between DVD player and BOSE amp.are malfunctioning. (without rear control switch models) • AV communication circuits between rear control switch and BOSE amp. are malfunctioning (with rear control switch models) • AV communication circuits between rear control switch and DVD player are malfunctioning (with rear control switch models)	• AV communication circuits between DVD player and BOSE amp. (without rear control switch models) • AV communication circuits between rear control switch and BOSE amp.
• AV COMM CIRCUIT [U1300] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits between video distributor and DVD player.	AV communication circuits between video distributor and DVD player.
• AV COMM CIRCUIT [U1300] • VIDEO DIST CONN [U1246] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits between multifunction switch and video distributor.	AV communication circuits between multifunction switch and video distributor.

Error item	Detection logic	Possible malfunction factor/Action to take
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • VIDEO DIST CONN [U1246] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits between AV control unit and multifunction switch.	AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F] • SWITCH CONN [U1240] • VIDEO DIST CONN [U1246] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits.	Check and repair the short circuit in AV communication circuits.

DATA MONITOR

ALL SIGNALS
- Displays the status of the following vehicle signals inputted into the AV control unit.
- For each signal, actual signal can be compared with the condition recognized on the system.

Display Item	Display	Vehicle status	Remarks
VHCL SPD SIG	On	Vehicle speed >0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed =0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	
	Off	Parking brake is released.	
ILLUM SIG	On	Light switch ON.	—
	Off	Light switch OFF.	
IGN SIG	On	Ignition switch ON.	
	Off	Ignition switch in ACC position.	
REV SIG	On	Selector lever in R position.	Changes in indication may be delayed. This is normal.
	Off	Selector lever in any position other than R.	

SELECTION FROM MENU
Allows the technician to select which vehicle signals should be displayed and displays the status of the selected vehicle signals.

Item to be selected	Description
VHCL SPD SIG	The same as when “ALL SIGNALS” is selected.
PKB SIG	
ILLUM SIG	
IGN SIG	
REV SIG	

COMPONENT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000004155939

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-29, "CAN Communication Signal Chart".

DTC Logic

INFOID:0000000004155940

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	Diagnostic item is detected when...	Probable malfunction location
U1000	CAN COMM CIRCUIT	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

Diagnosis Procedure

INFOID:0000000004155941

1.PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of “MULTI AV”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to “LAN system”. Refer to LAN-20, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI section. Refer to GI-26, "How to Perform Efficient Diagnosis for an Electrical Incident".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000004155942

Initial diagnosis of AV control unit.

DTC Logic

INFOID:0000000004155943

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	Diagnostic item is detected when...	Probable malfunction location
U1010	CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	AV control unit.

Diagnosis Procedure

INFOID:0000000004155944

1.REPLACE AV CONTROL UNIT

When DTC U1010 is detected, replace AV control unit.

>> INSPECTION END

U1310 AV CONTROL UNIT

Description

INFOID:0000000004155945

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155946

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace AV control unit.

U1200 AV CONTROL UNIT

Description

INFOID:0000000004155947

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155948

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1200	Cont Unit FLASH-ROM [U1200]	An internal malfunction is detected in AV control unit (FLASH-ROM).	Replace AV control unit.

U1201 AV CONTROL UNIT

Description

INFOID:0000000004155949

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155950

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1201	GYRO NO CONN [U1201]	Internal malfunction of AV control unit (gyrocompass disconnection) is detected.	Replace AV control unit.

U1216 AV CONTROL UNIT

Description

INFOID:0000000004155951

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155952

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1216	CAN CONT [U1216]	Internal malfunction of AV control unit (CAN controller) is detected.	Replace AV control unit.

U1217 AV CONTROL UNIT

Description

INFOID:0000000004155953

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155954

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1217	BLUETOOTH MODULE CONN [U1217]	Internal malfunction of AV control unit (Bluetooth module connection malfunction) is detected.	Replace AV control unit.

U1218 AV CONTROL UNIT

Description

INFOID:0000000004155955

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155956

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1218	HDD-CONN [U1218]	Internal malfunction of AV control unit (HDD connection malfunction) is detected.	Replace AV control unit.

U1219 AV CONTROL UNIT

Description

INFOID:0000000004155957

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155958

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1219	HDD-READ [U1219]	Internal malfunction of AV control unit (HDD read malfunction) is detected.	Replace AV control unit.

U1220 AV CONTROL UNIT

Description

INFOID:0000000004155959

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155960

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1220	XM SERIAL COMM [U1220]	Internal malfunction of AV control unit (satellite radio tuner communication error) is detected.	Replace AV control unit.

U121A AV CONTROL UNIT

Description

INFOID:0000000004155961

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155962

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U121A	HDD-WRITE [U121A]	Internal malfunction of AV control unit (HDD write malfunction) is detected.	Replace AV control unit.

U121B AV CONTROL UNIT

Description

INFOID:0000000004155963

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155964

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U121B	HDD-COMM [U121B]	Internal malfunction of AV control unit (HDD communication error) is detected.	Replace AV control unit.

U121C AV CONTROL UNIT

Description

INFOID:0000000004155965

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155966

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U121C	HDD-ACCESS [U121C]	Internal malfunction of AV control unit (HDD access error) is detected.	Replace AV control unit.

U121D AV CONTROL UNIT

Description

INFOID:0000000004155967

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155968

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U121D	DSP CONN [U121D]	Internal malfunction of AV control unit (DSP connection error) is detected.	Replace AV control unit.

U121E AV CONTROL UNIT

Description

INFOID:0000000004155969

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155970

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U121E	DSP COMM [U121E]	Internal malfunction of AV control unit (DSP communication error) is detected.	Replace AV control unit.

U121F AV CONTROL UNIT

Description

INFOID:0000000004155971

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155972

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U121F	INTERNAL COMM [U121F]	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.

Diagnosis Procedure

INFOID:0000000004155973

1.CHECK AV CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check AV control unit power supply and ground circuit. Refer to AV-594, "AV CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace malfunctioning parts.

U1204 GPS

Description

INFOID:0000000004155974

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155975

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1204	GPS CONN [U1204]	Internal malfunction of AV control unit (GPS malfunction) is detected.	Replace AV control unit.

Diagnosis Procedure

INFOID:0000000004155976

1. PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit.
NO >> The intermittent malfunction caused by strong radio interference can be detected.

U1205 GPS

Description

INFOID:0000000004155977

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155978

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1205	GPS ROM [U1205]	Internal malfunction of AV control unit (GPS malfunction) is detected.	Replace AV control unit.

Diagnosis Procedure

INFOID:0000000004155979

1. PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit.
NO >> The intermittent malfunction caused by strong radio interference can be detected.

U1206 GPS

Description

INFOID:0000000004155980

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155981

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1206	GPS RAM [U1206]	Internal malfunction of AV control unit (GPS malfunction) is detected.	Replace AV control unit.

Diagnosis Procedure

INFOID:0000000004155982

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit.
NO >> The intermittent malfunction caused by strong radio interference can be detected.

U1207 GPS

Description

INFOID:0000000004155983

Replace the AV control unit if this DTC is displayed. Refer to AV-1064, "Exploded View".

Part name	Description
AV CONTROL UNIT	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, satellite radio, and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It is connected to the steering angle sensor and receives the steering angle signal via CAN communication. It also transmits the steering angle signal to camera control unit via AV communication. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Update of map data is performed with the CONSULT-III and the applicable cable. • It includes the TEL adapter and Bluetooth™ function.

DTC Logic

INFOID:0000000004155984

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1207	GPS RTC [U1207]	Internal malfunction of AV control unit (GPS malfunction) is detected.	Replace AV control unit.

Diagnosis Procedure

INFOID:0000000004155985

1. PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit.
NO >> The intermittent malfunction caused by strong radio interference can be detected.

U1243 DISPLAY UNIT

Description

INFOID:0000000004155986

Part name	Description
FRONT DISPLAY UNIT	• Front display image is controlled by the serial communication from AV control unit. • RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing). Auxiliary image signal and DVD image signal are input from the video distributor. Camera image signal is input from camera control unit. • Synchronize signal (HP, VP) is output to AV control unit. • Touch panel function can be operated for each system by touching a display directly.

DTC Logic

INFOID:0000000004155987

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1243	FRONT DISP CONN [U1243]	When either one of the following items is detected: • front display unit power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and front display unit are malfunctioning. • serial communication signal between AV control unit and front display unit is malfunctioning.	• Front display unit power supply and ground circuits. • Serial communication circuits between AV control unit and front display unit.

Diagnosis Procedure

INFOID:0000000004155988

1.CHECK FRONT DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check front display unit power supply and ground circuits. Refer to AV-594, "FRONT DISPLAY UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminals 11, 22 and AV control unit harness connector terminals 102, 103.

11 - 102 : Continuity should exist.
22 - 103 : Continuity should exist.

4. Check continuity between front display unit harness connector terminals 11, 22 and ground.

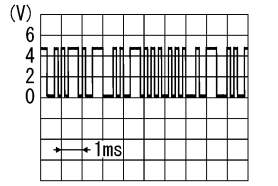
11, 22 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK SERIAL COMMUNICATION SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 11 and ground.

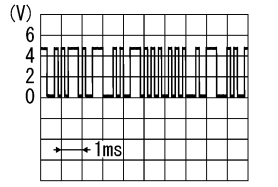
Terminal	Condition		Reference value
11 - Ground	Ignition switch ON	When adjusting front display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit.

4. CHECK SERIAL COMMUNICATION SIGNAL

Check signal between front display unit harness connector terminal 22 and ground.

Terminal	Condition		Reference value
22 - Ground	Ignition switch ON	When adjusting front display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace front display unit.

U1244 GPS ANTENNA

Description

INFOID:0000000004155989

Part name	Description
GPS ANTENNA	GPS signal is received and transmitted to AV control unit.

DTC Logic

INFOID:0000000004155990

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1244	GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	GPS antenna disconnection.

Diagnosis Procedure

INFOID:0000000004155991

1.GPS ANTENNA CHECK

Visually check GPS antenna and antenna feeder.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Turn ignition switch OFF.
2. Disconnect GPS antenna connector.
3. Turn ignition switch ON.
4. Check voltage between AV control unit terminal 105 and ground.

105 - Ground : Approx. 5 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace AV control unit.

U1247 REAR DISP CONN

Description

INFOID:0000000004155992

Part name	Description
REAR DISPLAY UNIT	• Rear display image is controlled by the serial communication from video distributor. • RGB image signal is input from video distributor (RGB and RGB area).Composite image signal (DVD and AUX images) is input from the video distributor. • Synchronize signal (HP, VP) is output to video distributor.

DTC Logic

INFOID:0000000004155993

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1247	REAR DISP CONN [U1247]	When either one of the following items is detected: • rear display unit power supply and ground circuits are malfunctioning. • serial communication circuits between video distributor and rear display unit are malfunctioning. • serial communication signal between video distributor and rear display unit is malfunctioning.	• Rear display unit power supply and ground circuits. • Serial communication circuits between AV control unit and rear display unit.

Diagnosis Procedure

INFOID:0000000004155994

1.CHECK REAR DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check rear display unit power supply and ground circuits. Refer to AV-595, "REAR DISPLAY UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY SERIAL COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector terminals 9, 10 and video distributor harness connector terminals 39, 40.

9 - 39 : Continuity should exist.
10 - 40 : Continuity should exist.

4. Check continuity between rear display unit harness connector terminals 9, 10 and ground.

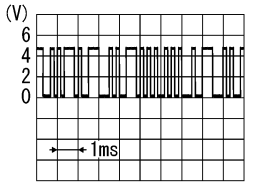
9, 10 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK SERIAL COMMUNICATION SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector terminal 9 and ground.

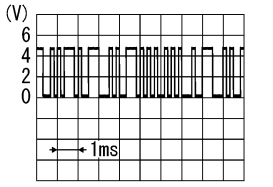
Terminal	Condition		Reference value
9 - Ground	Ignition switch ON	Rear seat remote controller operation.	 PKIB5039J

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace rear display unit.

4. CHECK SERIAL COMMUNICATION SIGNAL

Check signal between rear display unit harness connector terminal 10 and ground.

Terminal	Condition		Reference value
10 - Ground	Ignition switch ON	Rear seat remote controller operation.	 PKIB5039J

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace video distributor.

U1250 CAMERA CONTROL UNIT

Description

INFOID:0000000004155995

Part name	Description
CAMERA CONTROL UNIT	• Camera image signal is input from rear view camera, and camera image is indicated on the front display. • Power (camera ON signal) is transmitted to rear view camera. • Controlled by AV communication transmitted from AV control unit. • AV control unit recognizes the presence of camera system with camera connection recognition signal.

DTC Logic

INFOID:0000000004155996

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1250	CAMERA CONT. CONN [U1250]	Malfunction is detected in Camera-connection recognition signal circuit.	Camera-connection recognition signal circuit.

Diagnosis Procedure

INFOID:0000000004155997

1.CHECK CAMERA-CONNECTION RECOGNITION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and camera control unit connector.
3. Check continuity between AV control unit harness connector terminal 40 and camera control unit harness connector terminal 14.

40 - 14 : Continuity should exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector terminal 40 and ground.

40 - Ground : Approx. 5 V

Is the inspection result normal?

YES >> Replace camera control unit.
NO >> Replace AV control unit.

U1258 SATELLITE RADIO ANTENNA

Description

INFOID:0000000004155998

Part name	Description
SATELLITE RADIO ANTENNA	Satellite radio signal is received and transmitted to AV control unit.

DTC Logic

INFOID:0000000004155999

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1258	XM ANTENNA CONN [U1258]	Satellite radio antenna connection malfunction is detected.	• Satellite radio antenna feeder • Satellite radio antenna

Diagnosis Procedure

INFOID:0000000004156000

1. SATELLITE RADIO ANTENNA CHECK

Visually check satellite radio antenna and antenna feeder.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2. CHECK AV CONTROL UNIT VOLTAGE

1. Turn ignition switch OFF.
2. Disconnect satellite radio antenna connector.
3. Turn ignition switch ON.
4. Check voltage between AV control unit terminal 110 and ground.

110 - Ground : Approx. 5 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace AV control unit.

U1300 AV COMM CIRCUIT

Description

INFOID:0000000004156001

U1300 is indicated when malfunction occurs in communication signal of multi AV system. Indicated simultaneously, without fail, with the malfunction of control units connected to AV control unit with communication line. Determine the possible malfunction cause from the table below.

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display contents of CONSULT-III	Description	Possible malfunction factor/Action to take
U1300	• AV COMM CIRCUIT [U1300]	When either one of the following items is detected: • Rear control switch power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and rear control switch is malfunctioning.	Rear control switch power supply and ground circuits.
U1300 U121F	• AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F]	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items is detected: • Multifunction switch power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and multifunction switch is malfunctioning.	Multifunction switch power supply and ground circuits.
U1300 U1246	• AV COMM CIRCUIT [U1300] • VIDEO DIST CONN [U1246]	When either one of the following items is detected: • video distributor power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and video distributor is malfunctioning.	Video distributor power supply and ground circuits.
U1300 U1248	• AV COMM CIRCUIT [U1300] • DVD DECK CONN [U1248]	When either one of the following items is detected: • DVD player power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and DVD player is malfunctioning.	DVD player power supply and ground circuits.
U1300 U124E	• AV COMM CIRCUIT [U1300] • AMP CONN [U124E]	When either one of the following items is detected: • BOSE amp. power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and BOSE amp is malfunctioning.	BOSE amp. power supply and ground circuits.
U1300 U1252	• AV COMM CIRCUIT [U1300] • REAR CAMERA LAN CONN [U1252]	When either one of the following items is detected: • camera control unit power supply and ground circuits are malfunctioning. • AV communication signal between AV control unit and camera control unit is malfunctioning.	Camera control unit power supply and ground circuits.
U1300 U1254	• AV COMM CIRCUIT [U1300] • IPod CONN [U1254]	When either one of the following items is detected: • iPod adapter power supply and ground circuits are malfunctioning. • AV communication circuits between camera control unit and iPod adapter are malfunctioning. • AV communication signal between AV control unit and iPod adapter is malfunctioning.	• iPod adapter power supply and ground circuits. • AV communication circuits between camera control unit and iPod adapter.
U1300 U1252 U1254	• AV COMM CIRCUIT [U1300] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits between BOSE amp. and camera control unit.	AV communication circuits between BOSE amp. and camera control unit.

DTC	Display contents of CONSULT-III	Description	Possible malfunction factor/Action to take
U1300 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	When either one of the following items is detected: • AV communication circuits between DVD player and BOSE amp.are malfunctioning. (without rear control switch models) • AV communication circuits between rear control switch and BOSE amp. are malfunctioning (with rear control switch models) • AV communication circuits between rear control switch and DVD player are malfunctioning (with rear control switch models)	• AV communication circuits between DVD player and BOSE amp. (without rear control switch models) • AV communication circuits between rear control switch and BOSE amp.
U1300 U1248 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits between video distributor and DVD player.	AV communication circuits between video distributor and DVD player.
U1300 U1246 U1248 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • VIDEO DIST CONN [U1246] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits between multifunction switch and video distributor.	AV communication circuits between multifunction switch and video distributor.
U1300 U1240 U1246 U1248 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • VIDEO DIST CONN [U1246] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits between AV control unit and multifunction switch.	AV communication circuits between AV control unit and multifunction switch.
U1300 U121F U1240 U1246 U1248 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F] • SWITCH CONN [U1240] • VIDEO DIST CONN [U1246] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPod CONN [U1254]	Malfunction is detected in AV communication circuits.	Check and repair the short circuit in AV communication circuits.

POWER SUPPLY AND GROUND CIRCUIT
AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000004156002

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6
Ignition switch ON or START	12

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M76	19	OFF	Battery voltage
	M78	22		
		24		
ACC power supply	M76	7	ACC	Battery voltage
	M78	25		
Ignition signal	M78	35	ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between AV control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors.
3. Check continuity between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M78	21	OFF	Existed
		23		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

FRONT DISPLAY UNIT

FRONT DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000004156003

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between front display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M203	2	OFF	Battery voltage
ACC power supply	M203	3	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between front display unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector.
3. Check continuity between front display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M203	1	OFF	Existed
		13		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

REAR DISPLAY UNIT

REAR DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000004156004

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between rear display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	R102	3	OFF	Battery voltage
		4		
ACC power supply	R102	6	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between rear display unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector.
3. Check continuity between rear display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	R102	1	OFF	Existed
		2		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

VIDEO DISTRIBUTOR

VIDEO DISTRIBUTOR : Diagnosis Procedure

INFOID:0000000004156005

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6
Ignition switch ON or START	12

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between video distributor harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M208	54	OFF	Battery voltage
ACC power supply	M208	55	ACC	Battery voltage
Ignition signal	M208	56	ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between video distributor and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect video distributor connector.
3. Check continuity between video distributor harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M208	53	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

BOSE AMP.

BOSE AMP. : Diagnosis Procedure

INFOID:0000000004156006

BOSE SURROUND AUDIO 5.1CH SYSTEM MODELS

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	17, 18
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B108	50	OFF	Battery voltage
		51		
ACC power supply	B107	16	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between BOSE amp. and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector.
3. Check continuity between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B108	47	OFF	Existed
		52		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

BOSE 2CH SYSTEM MODELS

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	17, 18
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B108	50	OFF	Battery voltage
		51		
ACC power supply	B109	60	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between BOSE amp. and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector.
3. Check continuity between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B108	47	OFF	Existed
		52		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

iPod ADAPTER

iPod ADAPTER : Diagnosis Procedure

INFOID:0000000004156007

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between iPod adapter harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M85	5	OFF	Battery voltage
ACC power supply	M85	3	ACC	Battery voltage

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check harness between iPod adapter and fuse.

CAMERA CONTROL UNIT

CAMERA CONTROL UNIT : Diagnosis Procedure

INFOID:0000000004156008

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between camera control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B481	32	OFF	Battery voltage
ACC power supply	B481	30	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between camera control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect camera control unit connector.
3. Check continuity between camera control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B481	31	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

DVD PLAYER

DVD PLAYER : Diagnosis Procedure

INFOID:0000000004156009

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	37
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between DVD player harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M272	1	OFF	Battery voltage
ACC power supply	M272	2	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between DVD player and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect DVD player connector.
3. Check continuity between DVD player harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M272	17	OFF	Existed
	M292	49		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

MULTIFUNCTION SWITCH

MULTIFUNCTION SWITCH : Diagnosis Procedure

INFOID:0000000004156010

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery power supply	37
Ignition switch ACC or ON	6

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between multifunction switch harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M69	1	OFF	Battery voltage
ACC power supply	M69	2	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between multifunction switch and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect multifunction switch connector.
3. Check continuity between multifunction switch harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M69	14	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

RGB (R: RED) SIGNAL CIRCUIT (AV CONTROL UNIT TO FRONT DISPLAY UNIT)

Description

INFOID:0000000004156011

Transmit the image displayed with AV control unit with RGB signal to the front display unit.

Diagnosis Procedure

INFOID:0000000004156012

1. CHECK CONTINUITY RGB (R: RED) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 17 and AV control unit harness connector terminal 93.

17 - 93 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 17 and ground.

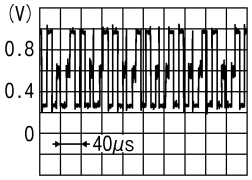
17 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK RGB (R: RED) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 17 and ground.

Terminal	Condition		Reference value
17 - Ground	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1029ZZ

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

RGB (G: GREEN) SIGNAL CIRCUIT (AV CONTROL UNIT TO FRONT DISPLAY UNIT)

Description

INFOID:0000000004156013

Transmit the image displayed with AV control unit with RGB signal to the front display unit.

Diagnosis Procedure

INFOID:0000000004156014

1. CHECK CONTINUITY RGB (G: GREEN) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 6 and AV control unit harness connector terminal 94.

6 - 94 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 6 and ground.

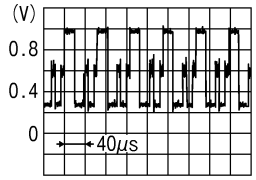
6 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK RGB (G: GREEN) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 6 and ground.

Terminal	Condition		Reference value
6 - Ground	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1030ZZ

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

RGB (B: BLUE) SIGNAL CIRCUIT (AV CONTROL UNIT TO FRONT DISPLAY UNIT)

Description

INFOID:0000000004156015

Transmit the image displayed with AV control unit with RGB signal to the front display unit.

Diagnosis Procedure

INFOID:0000000004156016

1. CHECK CONTINUITY RGB (B: BLUE) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 18 and AV control unit harness connector terminal 95.

18 - 95 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 18 and ground.

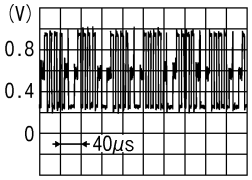
18 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK RGB (B: BLUE) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 18 and ground.

Terminal	Condition		Reference value
18 - Ground	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1031ZZ

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

RGB SYNCHRONIZING SIGNAL CIRCUIT

Description

INFOID:0000000004156017

Transmit the RGB synchronizing signal to the front display unit so as to synchronize the RGB image displayed with AV control unit.

Diagnosis Procedure

INFOID:0000000004156018

1.CHECK CONTINUITY RGB SYNCHRONIZING SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 19 and AV control unit harness connector terminal 97.

19 - 97 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 19 and ground.

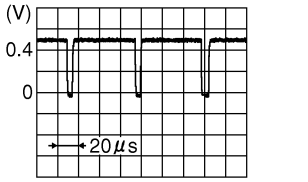
19 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB SYNCHRONIZING SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 19 and ground.

19 - Ground	 JPNIA0461GB

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

RGB AREA (YS) SIGNAL CIRCUIT (AV CONTROL UNIT TO FRONT DISPLAY UNIT)

Description

INFOID:0000000004156019

Transmits the front display area of RGB image displayed by AV control unit with RGB area (YS) signal to front display unit.

Diagnosis Procedure

INFOID:0000000004156020

1.CHECK CONTINUITY RGB AREA (YS) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 9 and AV control unit harness connector terminal 99.

9 - 99 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 9 and ground.

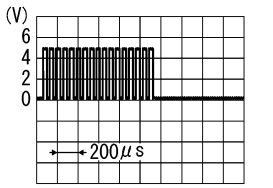
9 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB AREA (YS) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 9 and ground.

Terminal	Condition		Reference value
9 - Ground	Ignition switch ON	When RGB image is displayed	Approx. 5 V
		When rear view camera image is displayed.	

PKIB4948J

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace AV control unit.

HP SIGNAL CIRCUIT (FRONT DISPLAY UNIT TO AV CONTROL UNIT)

Description

INFOID:0000000004156021

In composite image (DVD and AUX images, camera image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from front display unit to AV control unit so as to synchronize the RGB images displayed with AV control unit such as the image quality adjusting menu, etc.

Diagnosis Procedure

INFOID:0000000004156022

1.CHECK CONTINUITY HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 8 and AV control unit harness connector terminal 100.

8 - 100 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 8 and ground.

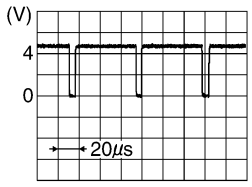
8 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HORIZONTAL SYNCHRONIZING (HP) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 8 and ground.

8 - Ground	 SKIB3601E

Is the inspection result normal?

YES >> Replace AV control unit.
NO >> Replace front display unit.

VP SIGNAL CIRCUIT (FRONT DISPLAY UNIT TO AV CONTROL UNIT)

Description

INFOID:0000000004156023

In composite image (DVD and AUX images, camera image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from front display unit to AV control unit so as to synchronize the RGB images displayed with AV control unit such as the image quality adjusting menu, etc.

Diagnosis Procedure

INFOID:0000000004156024

1.CHECK CONTINUITY VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector terminal 20 and AV control unit harness connector terminal 101.

20 - 101 : Continuity should exist.

4. Check continuity between front display unit harness connector terminal 20 and ground.

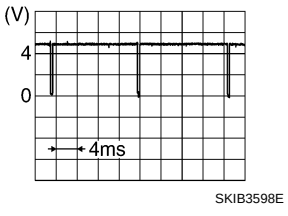
20 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VERTICAL SYNCHRONIZING (VP) SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 20 and ground.

20 - Ground	 SKIB3598E

Is the inspection result normal?

YES >> Replace AV control unit.
NO >> Replace front display unit.

COMPOSITE IMAGE SIGNAL CIRCUIT (VIDEO DISTRIBUTOR TO FRONT DISPLAY UNIT)

Description

INFOID:0000000004156025

Video distributor receives the image signal from the DVD player, and auxiliary input jack, and then transmits it to the front display unit and rear display unit.

Diagnosis Procedure

INFOID:0000000004156026

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect video distributor connector and front display unit connector.
3. Check continuity between video distributor harness connector terminal 8 and front display unit harness connector terminal 15.

8 - 15 : Continuity should exist.

4. Check continuity between video distributor harness connector terminal 6 and front display unit harness connector terminal 5.

6 - 5 : Continuity should exist.

5. Check continuity between front display unit harness connector terminal 15 and ground.

15 - Ground : Continuity should not exist.

6. Check continuity between front display unit harness connector terminal 5 and ground.

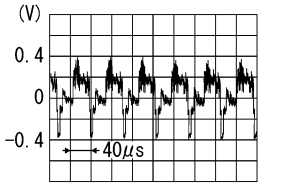
5 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMPOSITE IMAGE SIGNAL

1. Connect video distributor connector and front display unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector terminal 15 and 5.

Terminal	Condition		Reference value
15 - 5	Ignition switch ON	When AUX or DVD image is displayed on front display unit.	

SKIB2251J

Is the inspection result normal?

YES >> Replace front display unit.
NO >> Replace video distributor.

COMPOSITE IMAGE SIGNAL CIRCUIT (VIDEO DISTRIBUTOR TO REAR DISPLAY UNIT)

Description

INFOID:0000000004156027

Video distributor receives the image signal from the DVD player, and auxiliary input jack, and then transmits it to the front display unit and rear display unit.

Diagnosis Procedure

INFOID:0000000004156028

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect video distributor connector and rear display unit connector.
3. Check continuity between video distributor harness connector terminal 34 and rear display unit harness connector terminal 16.

34 - 16 : Continuity should exist.

4. Check continuity between rear display unit harness connector terminal 16 and ground.

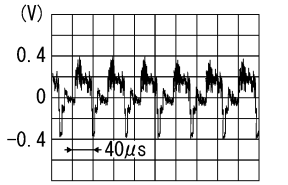
16 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMPOSITE IMAGE SIGNAL

1. Connect video distributor connector and rear display unit connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector terminal 16 and ground.

Terminal	Condition		Reference value
16 - Ground	Ignition switch ON	When AUX or DVD image is displayed on rear display.	

SKIB2251J

Is the inspection result normal?

YES >> Replace rear display unit.
NO >> Replace video distributor.

RGB (R: RED) SIGNAL CIRCUIT (VIDEO DISTRIBUTOR TO REAR DISPLAY UNIT)

Description

INFOID:0000000004156029

Transmit the image displayed with video distributor with RGB signal to the rear display unit.

Diagnosis Procedure

INFOID:0000000004156030

1. CHECK CONTINUITY RGB (R: RED) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector terminal 24 and video distributor harness connector terminal 25.

24 - 25 : Continuity should exist.

4. Check continuity between rear display unit harness connector terminal 24 and ground.

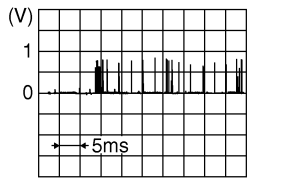
24 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK RGB (R: RED) SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector terminal 24 and ground.

Terminal	Condition		Reference value
24 - Ground	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	

JSNIA0984ZZ

Is the inspection result normal?

YES >> Replace rear display unit.
NO >> Replace video distributor.

RGB (G: GREEN) SIGNAL CIRCUIT (VIDEO DISTRIBUTOR TO REAR DISPLAY UNIT)

Description

INFOID:0000000004156031

Transmit the image displayed with video distributor with RGB signal to the rear display unit.

Diagnosis Procedure

INFOID:0000000004156032

1. CHECK CONTINUITY RGB (G: GREEN) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector terminal 23 and video distributor harness connector terminal 26.

23 - 26 : Continuity should exist.

4. Check continuity between rear display unit harness connector terminal 23 and ground.

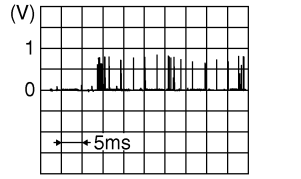
23 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK RGB (G: GREEN) SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector terminal 23 and ground.

Terminal	Condition		Reference value
23 - Ground	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA0984ZZ

Is the inspection result normal?

YES >> Replace rear display unit.
NO >> Replace video distributor.

RGB (B: BLUE) SIGNAL CIRCUIT (VIDEO DISTRIBUTOR TO REAR DISPLAY UNIT)

Description

INFOID:0000000004156033

Transmit the image displayed with video distributor with RGB signal to the rear display unit.

Diagnosis Procedure

INFOID:0000000004156034

1.CHECK CONTINUITY RGB (B: BLUE) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector terminal 22 and video distributor harness connector terminal 28.

22 - 28 : Continuity should exist.

4. Check continuity between rear display unit harness connector terminal 22 and ground.

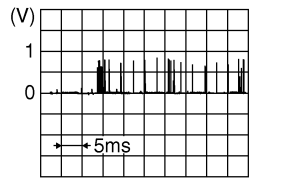
22 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (B: BLUE) SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector terminal 22 and ground.

Terminal	Condition		Reference value
22 - Ground	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA0984ZZ

Is the inspection result normal?

YES >> Replace rear display unit.
NO >> Replace video distributor.

COMPOSITE SYNCHRONIZING SIGNAL CIRCUIT (VIDEO DISTRIBUTOR TO REAR DISPLAY UNIT)

Description

INFOID:0000000004156035

Transmit the composite synchronizing signal to the rear display unit so as to synchronize the composite image displayed with video distributor.

Diagnosis Procedure

INFOID:0000000004156036

1.CHECK CONTINUITY COMPOSITE SYNCHRONIZING SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector terminal 15 and video distributor harness connector terminal 33.

15 - 33 : Continuity should exist.

4. Check continuity between rear display unit harness connector terminal 15 and ground.

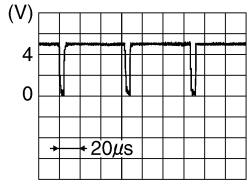
15 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB SYNCHRONIZING SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector terminal 15 and ground.

Terminal	Condition		Reference value
15 - Ground	Ignition switch ON	When AUX or DVD image is displayed on rear display unit.	

SKIB0825E

Is the inspection result normal?

YES >> Replace rear display unit.
NO >> Replace video distributor.

VP SIGNAL CIRCUIT (REAR DISPLAY UNIT TO VIDEO DISTRIBUTOR)

Description

INFOID:0000000004156037

In composite image (DVD and AUX images), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from rear display unit to video distributor so as to synchronize the RGB images displayed with video distributor such as the image quality adjusting menu, etc.

Diagnosis Procedure

INFOID:0000000004156038

1.CHECK CONTINUITY VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector terminal 19 and video distributor harness connector terminal 29.

19 - 29 : Continuity should exist.

4. Check continuity between rear display unit harness connector terminal 19 and ground.

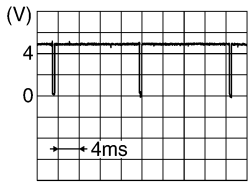
19 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VERTICAL SYNCHRONIZING (VP) SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector terminal 19 and ground.

19 - Ground	 SKIB3598E

Is the inspection result normal?

YES >> Replace video distributor.
NO >> Replace rear display unit.

HP SIGNAL CIRCUIT (REAR DISPLAY UNIT TO VIDEO DISTRIBUTOR)

Description

INFOID:0000000004156039

In composite image (DVD and AUX images), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from rear display unit to video distributor so as to synchronize the RGB images displayed with video distributor such as the image quality adjusting menu, etc.

Diagnosis Procedure

INFOID:0000000004156040

1. CHECK CONTINUITY HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector terminal 20 and video distributor harness connector terminal 30.

20 - 30 : Continuity should exist.

4. Check continuity between rear display unit harness connector terminal 20 and ground.

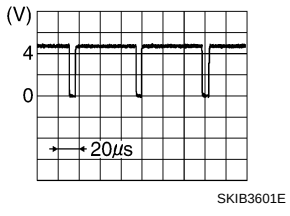
20 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK HORIZONTAL SYNCHRONIZING (HP) SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector terminal 20 and ground.

20 - Ground	 SKIB3601E

Is the inspection result normal?

YES >> Replace video distributor.
NO >> Replace rear display unit.

RGB AREA (YS) SIGNAL CIRCUIT (VIDEO DISTRIBUTOR TO REAR DISPLAY UNIT)

Description

INFOID:0000000004156041

Transmits the rear display area of RGB image displayed by video distributor with RGB area (YS) signal to rear display unit.

Diagnosis Procedure

INFOID:0000000004156042

1.CHECK CONTINUITY RGB AREA (YS) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector terminal 17 and video distributor harness connector terminal 32.

17 - 32 : Continuity should exist.

4. Check continuity between rear display unit harness connector terminal 17 and ground.

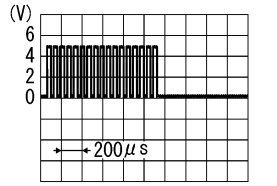
17 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB AREA (YS) SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector terminal 17 and ground.

Terminal	Condition		Reference value
17 - Ground	Ignition switch ON	When RGB image is displayed.	Approx. 0 V
		Rear seat remote controller operation when AUX or DVD image is displayed on rear display.	

PKIB4948J

Is the inspection result normal?

YES >> Replace rear display unit.
NO >> Replace video distributor.

AUX IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000004156043

Transmits the image signal of external device from auxiliary input jacks to video distributor.

Diagnosis Procedure

INFOID:0000000004156044

1. CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect auxiliary input jacks connector and video distributor connector.
3. Check continuity between auxiliary input jacks harness connector terminal 7 and video distributor harness connector terminal 19.

7 - 19 : Continuity should exist.

4. Check continuity between auxiliary input jacks harness connector terminal 8 and video distributor harness connector terminal 21.

8 - 21 : Continuity should exist.

5. Check continuity between auxiliary input jacks harness connector terminal 7 and ground.

7 - Ground : Continuity should not exist.

6. Check continuity between auxiliary input jacks harness connector terminal 8 and ground.

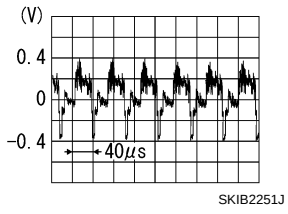
8 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK AUX IMAGE SIGNAL

1. Connect auxiliary input jacks connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between video distributor harness connector terminal 19 and 21.

Terminal	Condition		Reference value
19 - 21	Ignition switch ON	When AUX image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace video distributor.
NO >> Check that there is no malfunction in the external device.

DVD IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000004156045

The DVD player transmits the playback DVD image signal to the video distributor. The video distributor receives the image signal from the DVD player, and auxiliary input jack, and then transmits it to the front display and rear display.

Diagnosis Procedure

INFOID:0000000004156046

1.CHECK CONTINUITY DVD IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect DVD player connector and video distributor connector.
3. Check continuity between DVD player harness connector terminal 20 and video distributor harness connector terminal 23.

20 - 23 : Continuity should exist.

4. Check continuity between DVD player harness connector terminal 19 and video distributor harness connector terminal 22.

19 - 22 : Continuity should exist.

5. Check continuity between video distributor harness connector terminal 23 and ground.

23 - Ground : Continuity should not exist.

6. Check continuity between video distributor harness connector terminal 22 and ground.

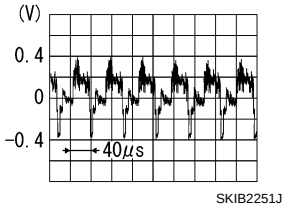
22 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK DVD IMAGE SIGNAL

1. Connect DVD player connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between video distributor harness connector terminal 23 and 22.

Terminal	Condition		Reference value
23 - 22	Ignition switch ON	When AUX image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace video distributor.
NO >> Replace DVD player.

MICROPHONE SIGNAL CIRCUIT

Description

INFOID:0000000004156047

Supply power from AV control unit to microphone. The microphone transmits the sound/voice to the AV control unit.

Diagnosis Procedure

INFOID:0000000004156048

1.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and microphone connector.
3. Check continuity between AV control unit harness connector terminals 26, 27, 28 and microphone harness connector terminals 4, 2, 1.

26 - 4 : Continuity should exist.
27 - 2 : Continuity should exist.
28 - 1 : Continuity should exist.

4. Check continuity between AV control unit harness connector terminals 26, 28 and ground.

26, 28 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE VCC

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector terminals 26 and 27.

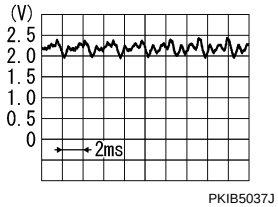
26 - 27 : Approx. 5 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit.

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between AV control unit harness connector terminals 28 and 27.

Terminal	Condition		Reference value
28 - 27	Ignition switch ON	Give a voice.	

PKIB5037J

Is the inspection result normal?

YES >> Replace AV control unit.
NO >> Replace microphone.

AUDIOPILOT® MICROPHONE

BOSE AUDIO 2CH SYSTEM

BOSE AUDIO 2CH SYSTEM : Description

INFOID:0000000004156049

The microphone transmits the microphone signal to the BOSE amp.

BOSE AUDIO 2CH SYSTEM : Diagnosis Procedure

INFOID:0000000004156050

1.CHECK CONTINUITY BETWEEN BOSE AMP. AND AUDIOPILOT® MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector and AudioPilot®microphone connector.
3. Check continuity between BOSE amp. harness connector terminals 25, 26 and AudioPilot®microphone harness connector terminals 1, 2.

25 - 1 : Continuity should exist.
26 - 2 : Continuity should exist.

4. Check continuity between BOSE amp. harness connector terminals 25, 26 and ground.

25, 26 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE VCC

1. Connect BOSE amp. connector.
2. Turn ignition switch ON.
3. Check voltage between BOSE amp. harness connector terminals 25 and ground.

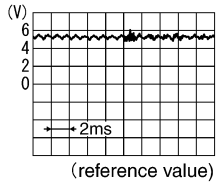
25 - Ground : Approx. 5 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BOSE amp.

3.CHECK MICROPHONE SIGNAL

1. Turn ignition switch OFF.
2. Connect AudioPilot®microphone connector.
3. Turn ignition switch ON.
4. Check signal between BOSE amp. harness connector terminals 25 and 26.

Terminal	Condition		Reference value
25 - 26	Ignition switch ON	When inputting noise.	

(reference value)

PKIA2104E

Is the inspection result normal?

YES >> Replace BOSE amp.
NO >> Replace AudioPilot®microphone.

BOSE SURROUND AUDIO 5.1CH SYSTEM

BOSE SURROUND AUDIO 5.1CH SYSTEM : Description

INFOID:0000000004156051

The microphone transmits the microphone signal to the BOSE amp.

BOSE SURROUND AUDIO 5.1CH SYSTEM : Diagnosis Procedure

INFOID:0000000004156052

1. CHECK CONTINUITY BETWEEN BOSE AMP. AND AUDIOPILOT® MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector and AudioPilot®microphone connector.
3. Check continuity between BOSE amp. harness connector terminals 31, 11 and AudioPilot®microphone harness connector terminals 1, 2.

31 - 1 : Continuity should exist.
11 - 2 : Continuity should exist.

4. Check continuity between BOSE amp. harness connector terminals 31, 11 and ground.

31, 11 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK VOLTAGE MICROPHONE VCC

1. Connect BOSE amp. connector.
2. Turn ignition switch ON.
3. Check voltage between BOSE amp. harness connector terminals 31 and ground.

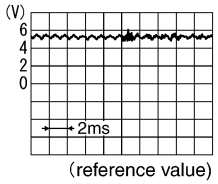
31 - Ground : Approx. 5 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace BOSE amp.

3. CHECK MICROPHONE SIGNAL

1. Turn ignition switch OFF.
2. Connect AudioPilot®microphone connector.
3. Turn ignition switch ON.
4. Check signal between BOSE amp. harness connector terminals 31 and 11.

Terminal	Condition		Reference value
31 - 11	Ignition switch ON	When inputting noise.	 (reference value) PKIA2104E

Is the inspection result normal?

YES >> Replace BOSE amp.
NO >> Replace AudioPilot®microphone.

CAMERA IMAGE SIGNAL CIRCUIT (REAR VIEW CAMERA TO CAMERA CONTROL UNIT)

Description

INFOID:0000000004156053

- Camera control unit outputs camera ON signal to rear view camera and inputs rear view camera image signal from rear view camera when the reverse signal is input.
- The camera control unit that inputs the camera image signal transmits the camera image signal to the front display unit.

Diagnosis Procedure

INFOID:0000000004156054

1.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect camera control unit connector and rear view camera connector.
3. Check continuity between camera control unit harness connector terminal 6 and rear view camera harness connector terminal 3.

6 - 3 : Continuity should exist.

4. Check continuity between camera control unit harness connector terminal 6 and ground.

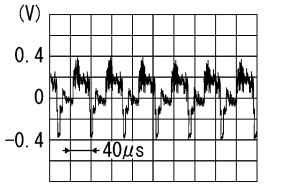
6 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK CAMERA IMAGE SIGNAL

1. Connect camera control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Check signal between camera control unit harness connector terminal 6 and ground.

Terminal	Condition		Reference value
6 - Ground	Ignition switch ON	When rear view camera image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace camera control unit.
NO >> Replace rear view camera.

CAMERA ON SIGNAL CIRCUIT

Description

INFOID:0000000004156055

- Camera control unit outputs camera ON signal to rear view camera and inputs rear view camera image signal from rear view camera when the reverse signal is input.
- The camera control unit that inputs the camera image signal transmits the camera image signal to the front display unit.

Diagnosis Procedure

INFOID:0000000004156056

1. CHECK CONTINUITY CAMERA ON SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect camera control unit connector and rear view camera connector.
3. Check continuity between camera control unit harness connector terminal 8 and rear view camera harness connector terminal 1.

8 - 1 : Continuity should exist.

4. Check continuity between camera control unit harness connector terminal 8 and ground.

8 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK VOLTAGE CAMERA ON SIGNAL

1. Connect camera control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Check signal between camera control unit harness connector terminal 8 and ground.

8 - Ground
Shift the selector lever to “R” position
: Approx. 6 V

Is the inspection result normal?

YES >> Replace rear view camera.
NO >> Replace camera control unit.

CAMERA IMAGE SIGNAL CIRCUIT (CAMERA CONTROL UNIT TO FRONT DISPLAY UNIT)

Description

INFOID:0000000004156057

- Camera control unit outputs camera ON signal to rear view camera and inputs rear view camera image signal from rear view camera when the reverse signal is input.
- The camera control unit that inputs the camera image signal transmits the camera image signal to the front display unit.

Diagnosis Procedure

INFOID:0000000004156058

1.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect camera control unit connector and front display unit connector.
3. Check continuity between camera control unit harness connector terminal 12 and front display unit harness connector terminal 12.

12 - 12 : Continuity should exist.

4. Check continuity between camera control unit harness connector terminal 12 and ground.

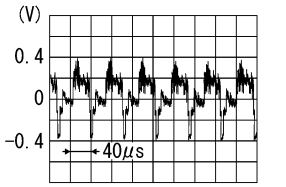
12 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK CAMERA IMAGE SIGNAL

1. Connect camera control unit connector and front display unit connector.
2. Turn ignition switch ON.
3. Check signal between camera control unit harness connector terminal 12 and ground.

Terminal	Condition		Reference value
12 - Ground	Ignition switch ON	When rear view camera image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace display unit.
NO >> Replace camera control unit.

STEERING SWITCH SIGNAL A CIRCUIT

Description

INFOID:0000000004156059

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000004156060

1.CHECK STEERING SWITCH SIGNAL A CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and spiral cable connector.
3. Check continuity between AV control unit harness connector terminal 6 and spiral cable harness connector terminal 33.

6 - 33 : Continuity should exist.

4. Check continuity between AV control unit harness connector terminals 6 and ground.

6 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable.

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector terminals 6 and 15.

6 - 15 : Approx. 5 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit.

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-625, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch.

Component Inspection

INFOID:0000000004156061

Measure the resistance between the steering switch connector terminals 20 to 17 and 19 to 17.

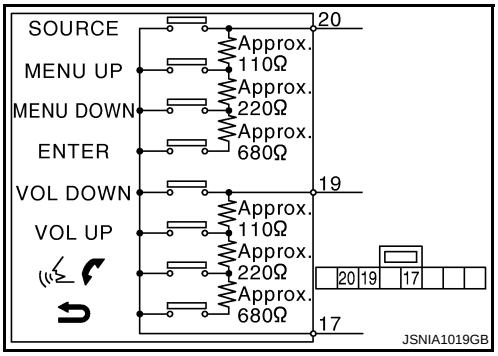
Standard

Between terminals 20 and 17

ENTER switch ON	**: 990 – 1030 Ω**
MENU DOWN switch ON	**: 323 – 337 Ω**
MENU UP switch ON	**: 108 – 112 Ω**
SOURCE switch ON	**: 0 Ω**

Between terminals 19 and 17

switch ON	**: 990 – 1030 Ω**
switch ON	**: 323 – 337 Ω**
VOL UP switch ON	**: 108 – 112 Ω**
VOL DOWN switch ON	**: 0 Ω**



STEERING SWITCH SIGNAL B CIRCUIT

Description

INFOID:0000000004156062

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000004156063

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and spiral cable connector.
3. Check continuity between AV control unit harness connector terminal 16 and spiral cable harness connector terminals 32.

16 - 32 : Continuity should exist.

4. Check continuity between AV control unit harness connector terminal 16 and ground.

16 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable.

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector terminals 16 and 15.

16 - 15 : Approx. 5 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit.

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-627, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch.

Component Inspection

INFOID:0000000004156064

Measure the resistance between the steering switch connector terminals 20 to 17 and 19 to 17.

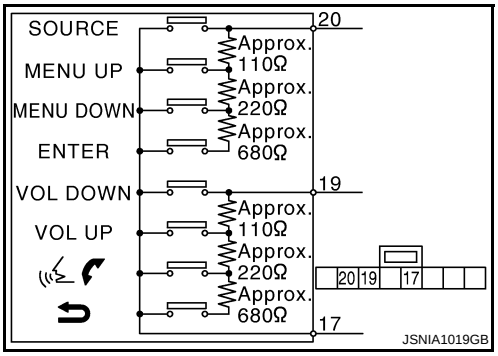
Standard

Between terminals 20 and 17

ENTER switch ON	**: 990 – 1030 Ω**
MENU DOWN switch ON	**: 323 – 337 Ω**
MENU UP switch ON	**: 108 – 112 Ω**
SOURCE switch ON	**: 0 Ω**

Between terminals 19 and 17

switch ON	**: 990 – 1030 Ω**
switch ON	**: 323 – 337 Ω**
VOL UP switch ON	**: 108 – 112 Ω**
VOL DOWN switch ON	**: 0 Ω**



STEERING SWITCH SIGNAL GND CIRCUIT

Description

INFOID:0000000004156065

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000004156066

1.CHECK STEERING SWITCH SIGNAL GND CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector terminal 15 and spiral cable harness connector terminal 27.

15 - 27 : Continuity should exist.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable.

3.CHECK GROUND CIRCUIT

1. Connect AV control unit connector.
2. Check continuity between AV control unit harness connector terminal 15 and ground.

15 - Ground : Continuity should exist.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit.

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-629, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch.

Component Inspection

INFOID:0000000004156067

Measure the resistance between the steering switch connector terminals 20 to 17 and 19 to 17.

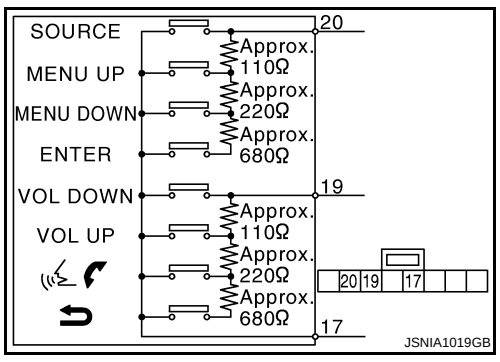
Standard

Between terminals 20 and 17

ENTER switch ON	**: 990 – 1030 Ω**
MENU DOWN switch ON	**: 323 – 337 Ω**
MENU UP switch ON	**: 108 – 112 Ω**
SOURCE switch ON	**: 0 Ω**

Between terminals 19 and 17

switch ON	**: 990 – 1030 Ω**
switch ON	**: 323 – 337 Ω**
VOL UP switch ON	**: 108 – 112 Ω**
VOL DOWN switch ON	**: 0 Ω**



ECU DIAGNOSIS

AV CONTROL UNIT

Reference Value

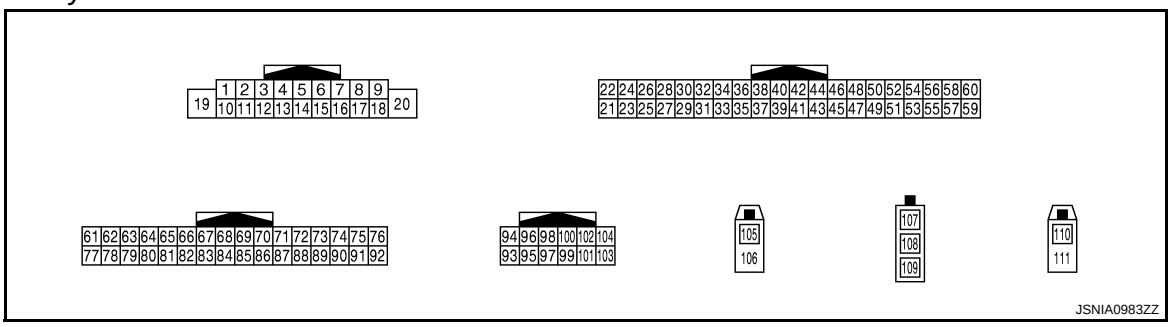
INFOID:0000000004156068

VALUES ON THE DIAGNOSIS TOOL

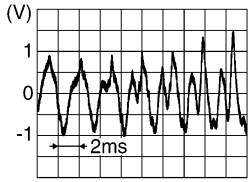
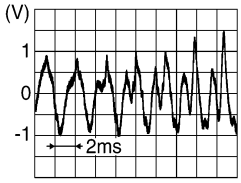
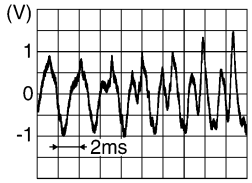
CONSULT-III monitor item

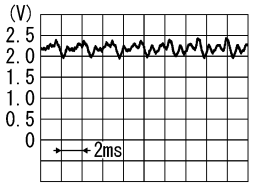
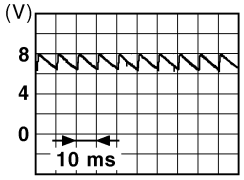
Display Item	Dis-play	Vehicle status	Remarks
VHCL SPD SIG	On	Vehicle speed >0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed =0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	Changes in indication may be delayed. This is normal.
	Off	Parking brake is released.	
ILLUM SIG	On	Block the light beam from the auto light optical sensor when the light SW is ON.	—
	Off	Expose the auto light optical sensor to light when the light SW is OFF or ON.	
IGN SIG	On	Ignition switch ON	—
	Off	Ignition switch in ACC position	
REV SIG	On	Shift the selector lever to “R” position.	Changes in indication may be delayed. This is normal.
	Off	Shift the selector lever other than “R” position.	

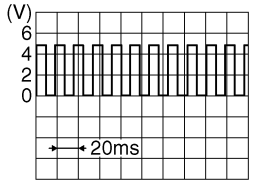
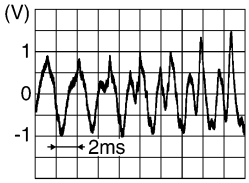
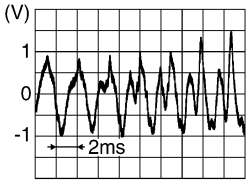
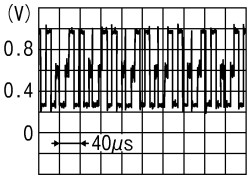
Terminal Layout

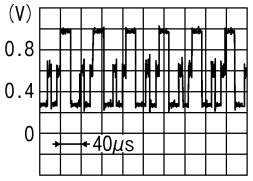
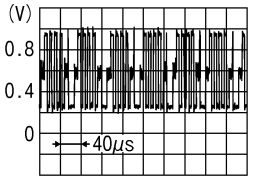
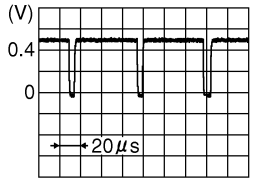
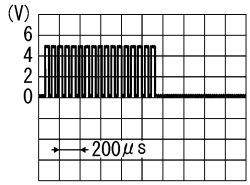
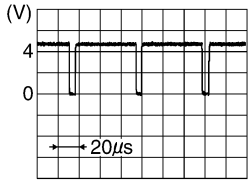


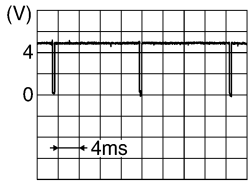
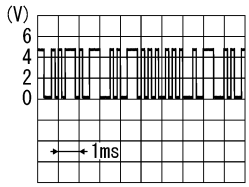
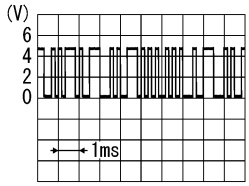
Physical Values

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
2 (R/L)*1 (R)*2	3 (W)	Sound signal LH	Output	Ignition switch ON	Audio sound output. (except DVD mode)*1	 SKIB3609E
4 (L/G)	5 (L/Y)	Voice guidance signal	Output	Ignition switch ON	Voice guidance output.	 SKIB3609E
6 (BR)	15 (G)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing MENU UP switch.	1 V
					Keep pressing MENU DOWN switch.	2 V
					Keep pressing ENTER switch.	3 V
					Except for above.	5 V
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
8 (R/Y)	Ground	Illumination control signal	Input	Ignition switch ON	Illumination control switch is operated by lighting switch in ON position.	Change between approx. 0 V and approx. 12 V
9 (LG)	Ground	Illumination signal	Input	Ignition switch ON	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12 V
11 (P)*1 (Y)*2	12 (L)	Sound signal RH	Output	Ignition switch ON	Audio sound output. (except DVD mode)*1	 SKIB3609E
14	—	Shield	—	—	—	—
15 (G)	Ground	Steering switch signal ground	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
16 (O)	15 (G)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	1 V
					Keep pressing switch.	2 V
					Keep pressing switch.	3 V
					Except for above.	5 V
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
21 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
22 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
23 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
24 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
25 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
26 (O)	27	Microphone VCC	Output	Ignition switch ON	—	5 V
27	Ground	Shield (Microphone ground)	—	Ignition switch ON	—	0 V
28 (W)	27	Microphone signal	Input	Ignition switch ON	Give a voice.	 PKIB5037J
35 (Y/G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
36 (P)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake ON.	0 V
					Parking brake OFF.	 JSNIA0007GB

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
37 (O)	Ground	Reverse signal	Input	Ignition switch ON	R position.	12 V
					Other than R position.	0 V
38 (G)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25MPH).	**NOTE:** Maximum voltage may be 12 V due to specifications (connected units).  SKIA6649J
40 (W/R)	Ground	Camera-connection recognition signal	Input	Ignition switch ON	Connected to camera control unit connector.	0 V
					Not connected to camera control unit connector.	5 V
48 (W)	—	AV communication signal (H)	Input/ Output	—	—	—
49 (R)	—	AV communication signal (L)	Input/ Output	—	—	—
50 (BR)	—	AV communication signal (H)	Input/ Output	—	—	—
51 (B/R)	—	AV communication signal (L)	Input/ Output	—	—	—
52 (L)	—	CAN–H	Input/ Output	—	—	—
53 (P)	—	CAN–L	Input/ Output	—	—	—
67 (B/R)	83 (BR)	BOSE 2ch models • Sound signal LH (DVD, AUX and iPod sound)	Input	Ignition switch ON	When DVD, AUX or iPod mode is selected.	 SKIB3609E
		BOSE surround audio 5.1ch models • Sound signal LH (AUX and iPod sound)			When AUX or iPod mode is selected.	
68 (B/W)	84 (L)	BOSE 2ch models • Sound signal RH (DVD, AUX and iPod sound)	Input	Ignition switch ON	When DVD, AUX or iPod mode is selected.	 SKIB3609E
		BOSE surround audio 5.1ch models • Sound signal RH (AUX and iPod sound)			When AUX or iPod mode is selected.	
93 (G/O)	Ground	RGB signal (R: red) for front display unit	Output	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1029ZZ

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
94 (G/R)	Ground	RGB signal (G: green) for front display unit	Output	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1030ZZ
95 (G/Y)	Ground	RGB signal (B: blue) for front display unit	Output	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1031ZZ
96 (P)	Ground	RGB ground for front display unit	—	Ignition switch ON	—	0 V
97 (L)	Ground	RGB synchronizing signal for front display unit	Output	Ignition switch ON	—	 JPNIA0461GB
98 (B)	Ground	RGB synchronizing signal ground for front display unit	—	Ignition switch ON	—	0 V
99 (G)	Ground	RGB area (YS) signal for front display unit	Output	Ignition switch ON	When RGB image is displayed.	5 V
					When rear view camera image is displayed.	 PKIB4948J
100 (W)	Ground	Horizontal synchronizing (HP) signal for front display unit	Input	Ignition switch ON	—	 SKIB3601E

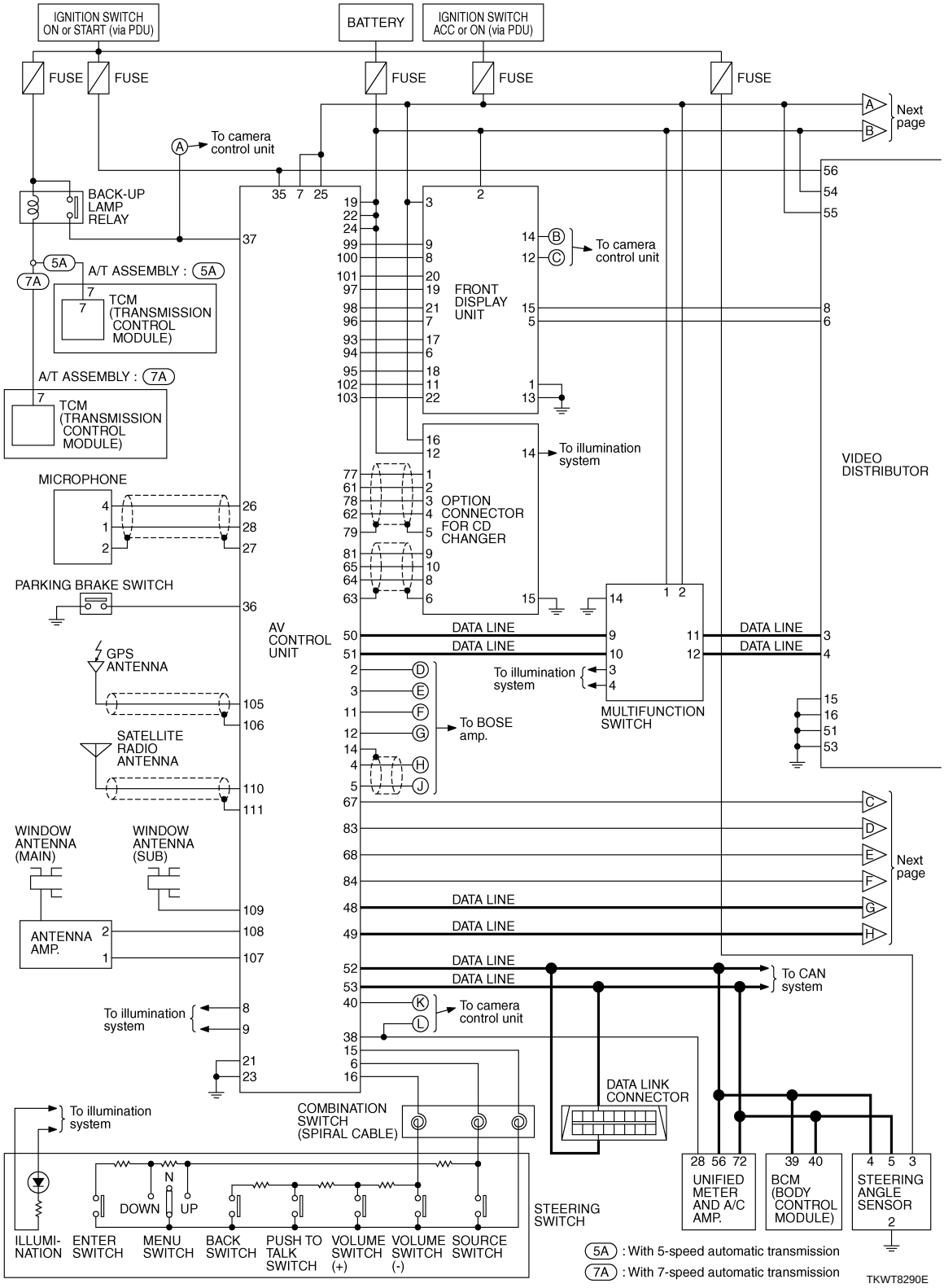
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
101 (R)	Ground	Vertical synchronizing (VP) signal for display unit	Input	Ignition switch ON	—	 SKIB3598E
102 (O/L)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting front display brightness.	 PKIB5039J
103 (W/L)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting front display brightness.	 PKIB5039J
105	Ground	GPS antenna signal	Input	Ignition switch ON	Not connected to GPS antenna connector.	5 V
106	—	Shield	—	—	—	—
107	Ground	Antenna amp. ON signal	Output	Ignition switch ON	—	12 V
108	—	AM–FM main	Input	—	—	—
109	—	FM sub	Input	—	—	—
110	Ground	Satellite antenna signal	Input	Ignition switch ON	Not connected to satellite antenna connector.	5 V
111	—	Shield	—	—	—	—

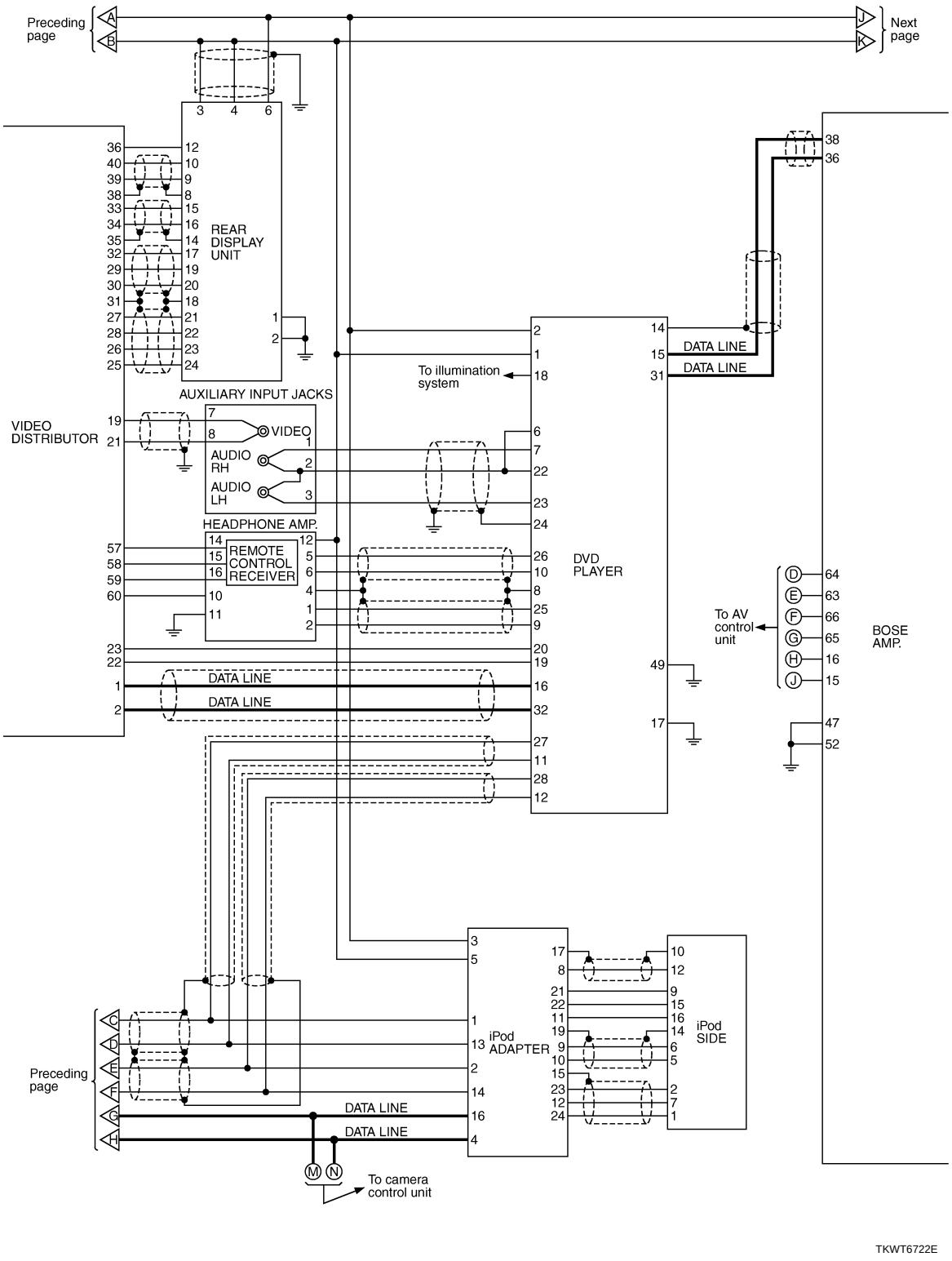
*1: BOSE surround audio 5.1ch system models.

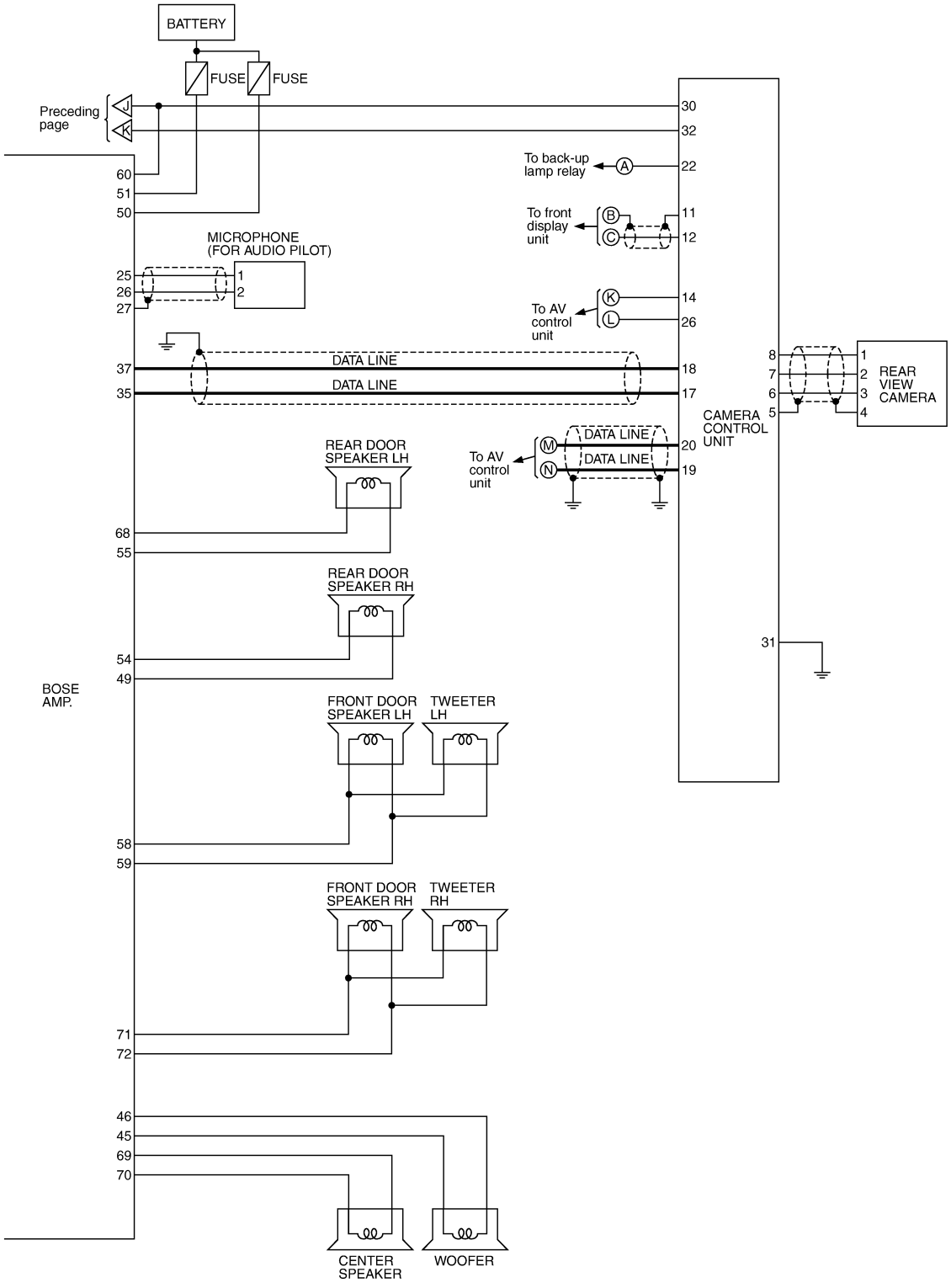
*2: BOSE 2ch system models.

Schematic - BOSE Audio 2ch System-

INFOID:0000000004156069




Preceding page
Next page
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
To illumination system
DVD PLAYER
DATA LINE
DATA LINE
DATA LINE
To AV control unit
BOSE AMP.
iPod ADAPTER
iPod SIDE
Preceding page
DATA LINE
DATA LINE
To camera control unit
TKWT6722E



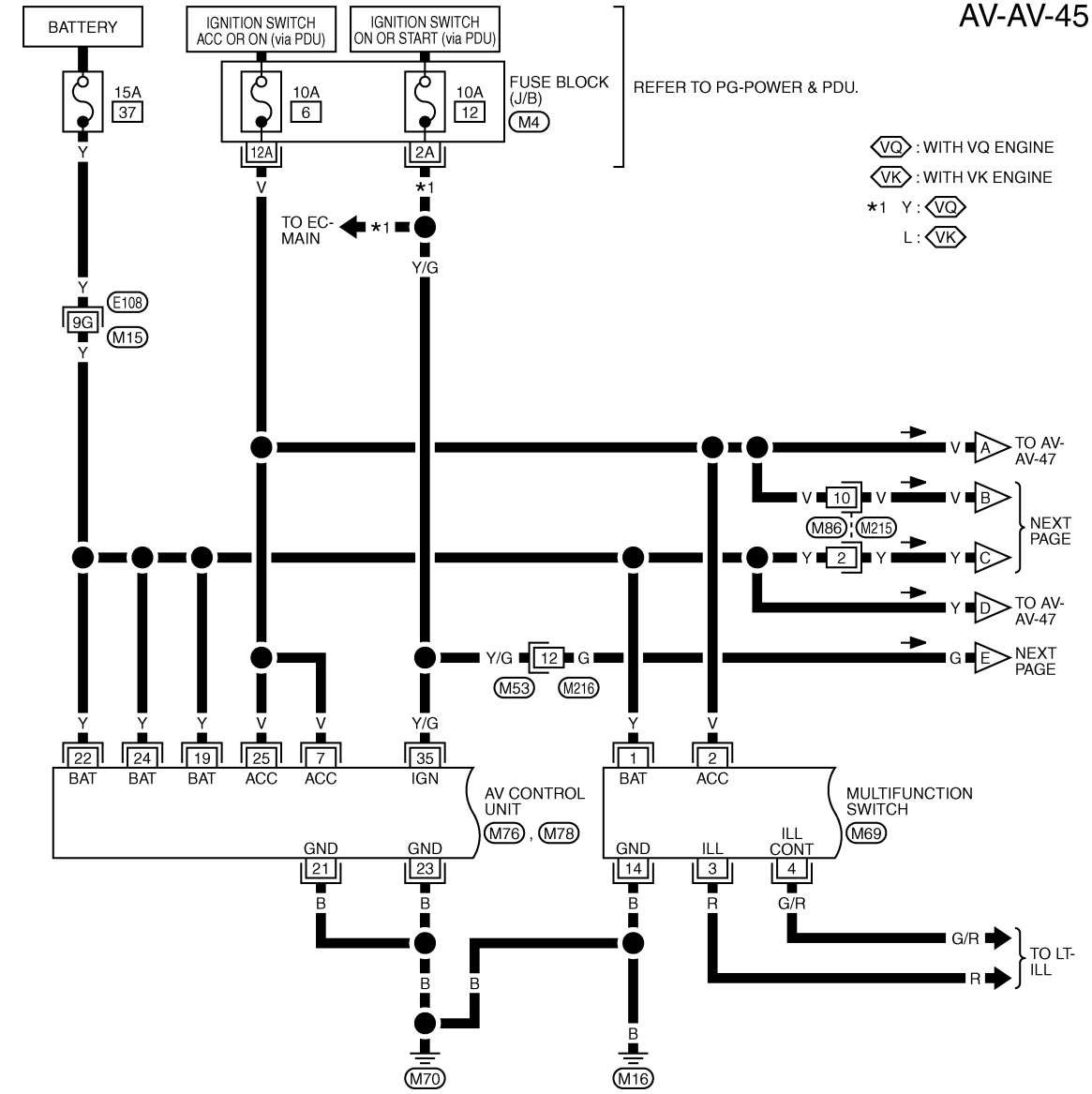
TKWT6723E

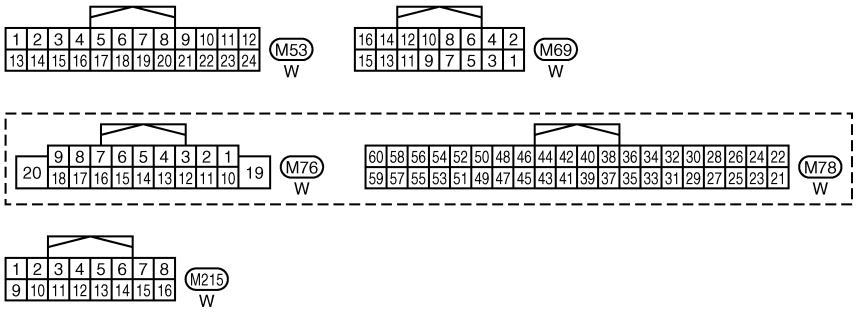
Wiring Diagram - AV - / BOSE Audio 2ch System

INFOID:0000000004156070

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

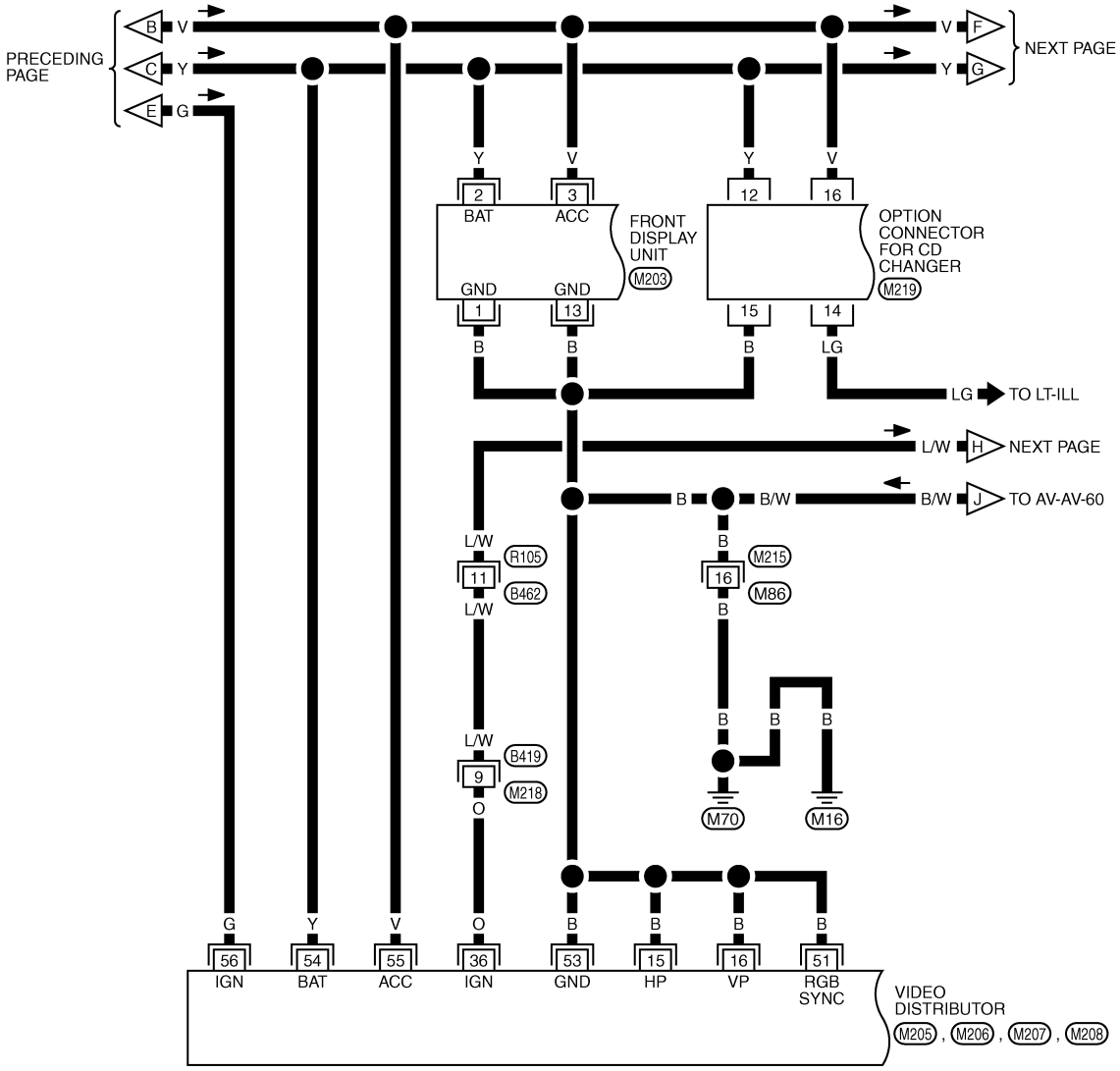


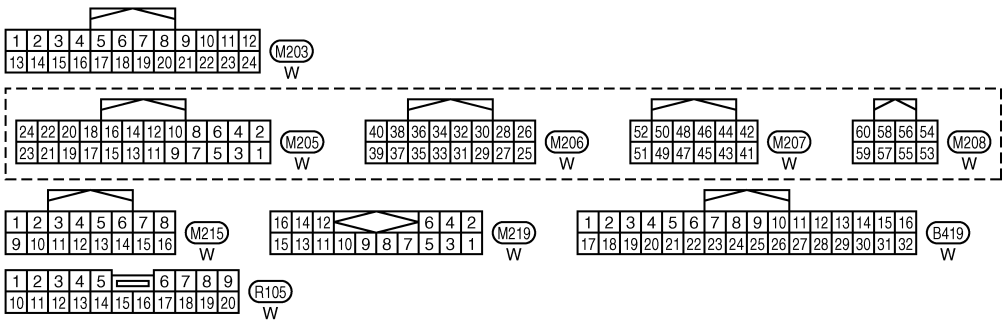


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8291E

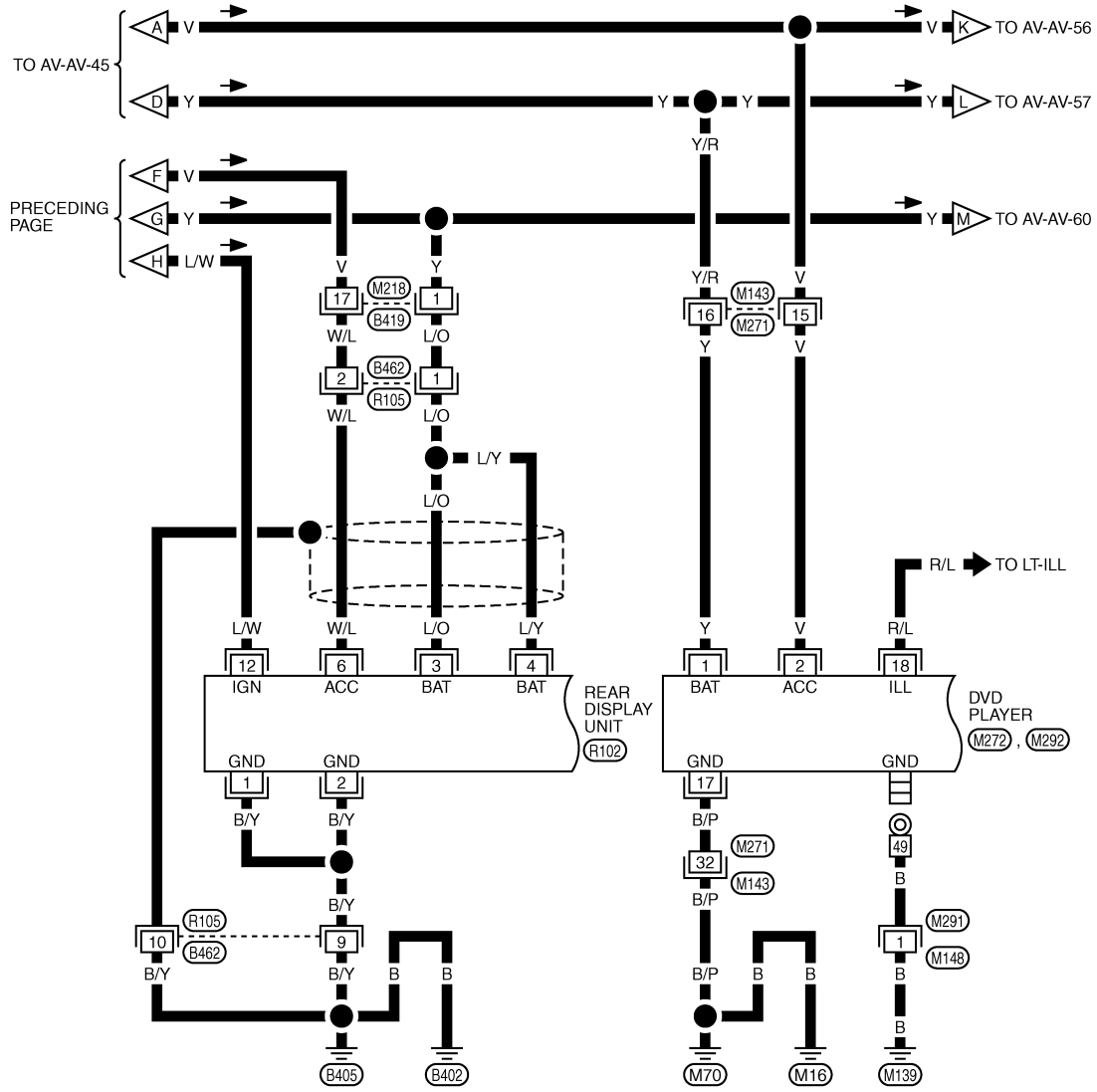
AV-AV-46

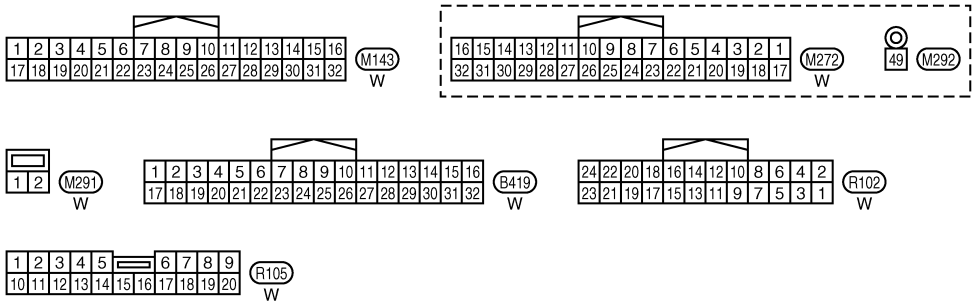




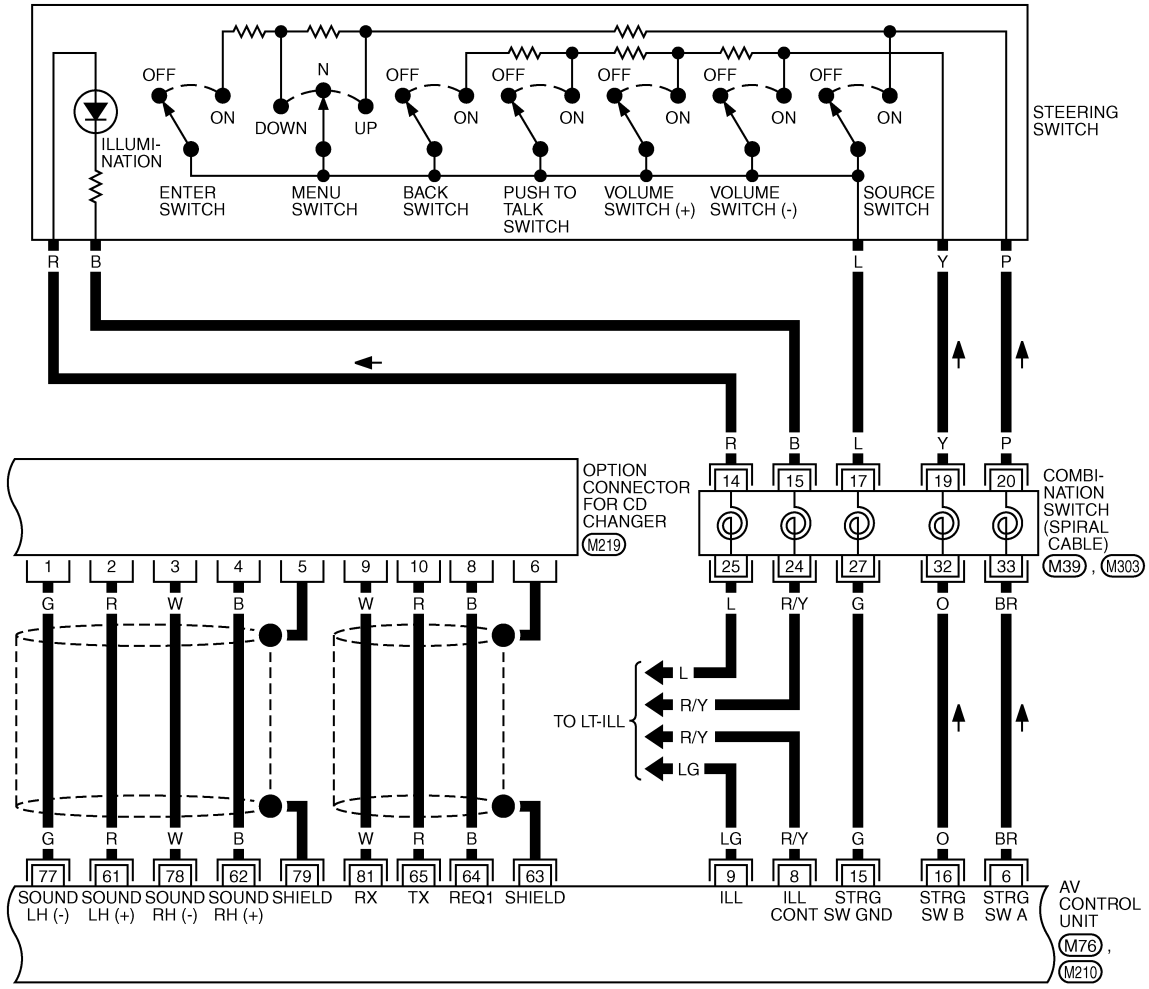
TKWT8292E

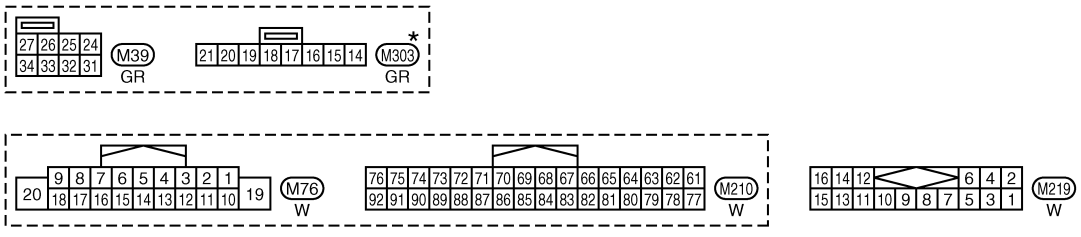
AV-AV-47





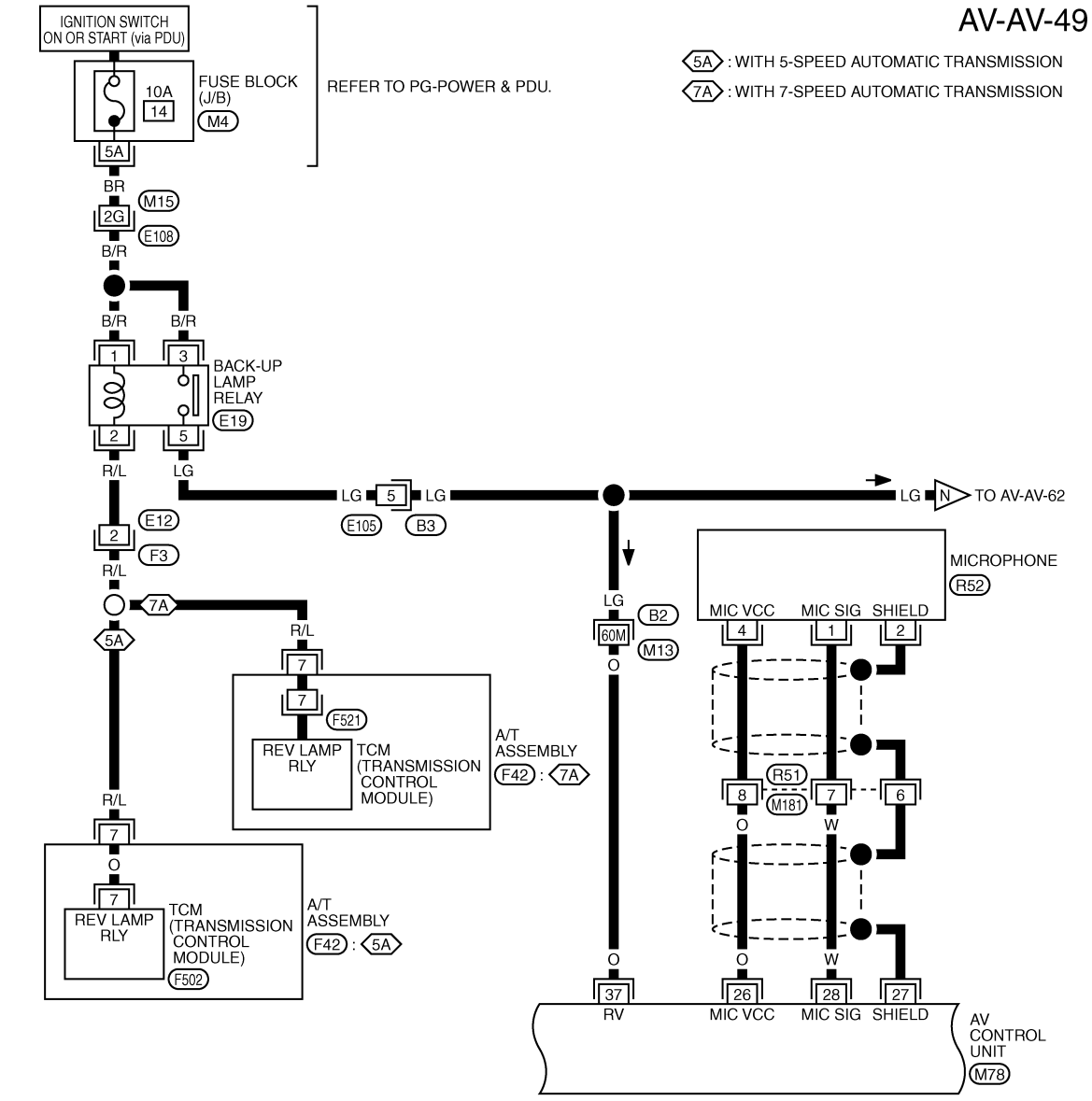
TKWT8293E





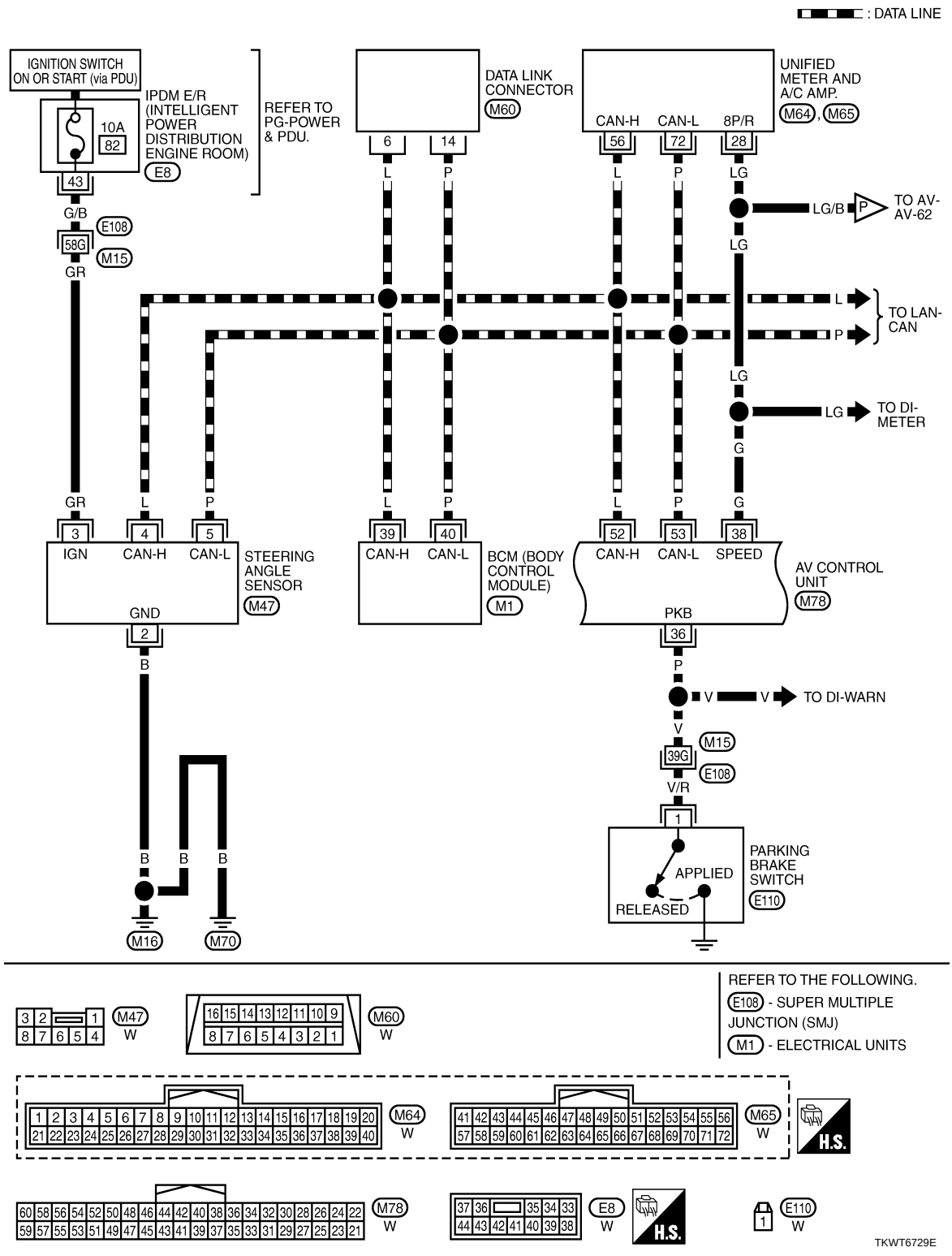
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8294E

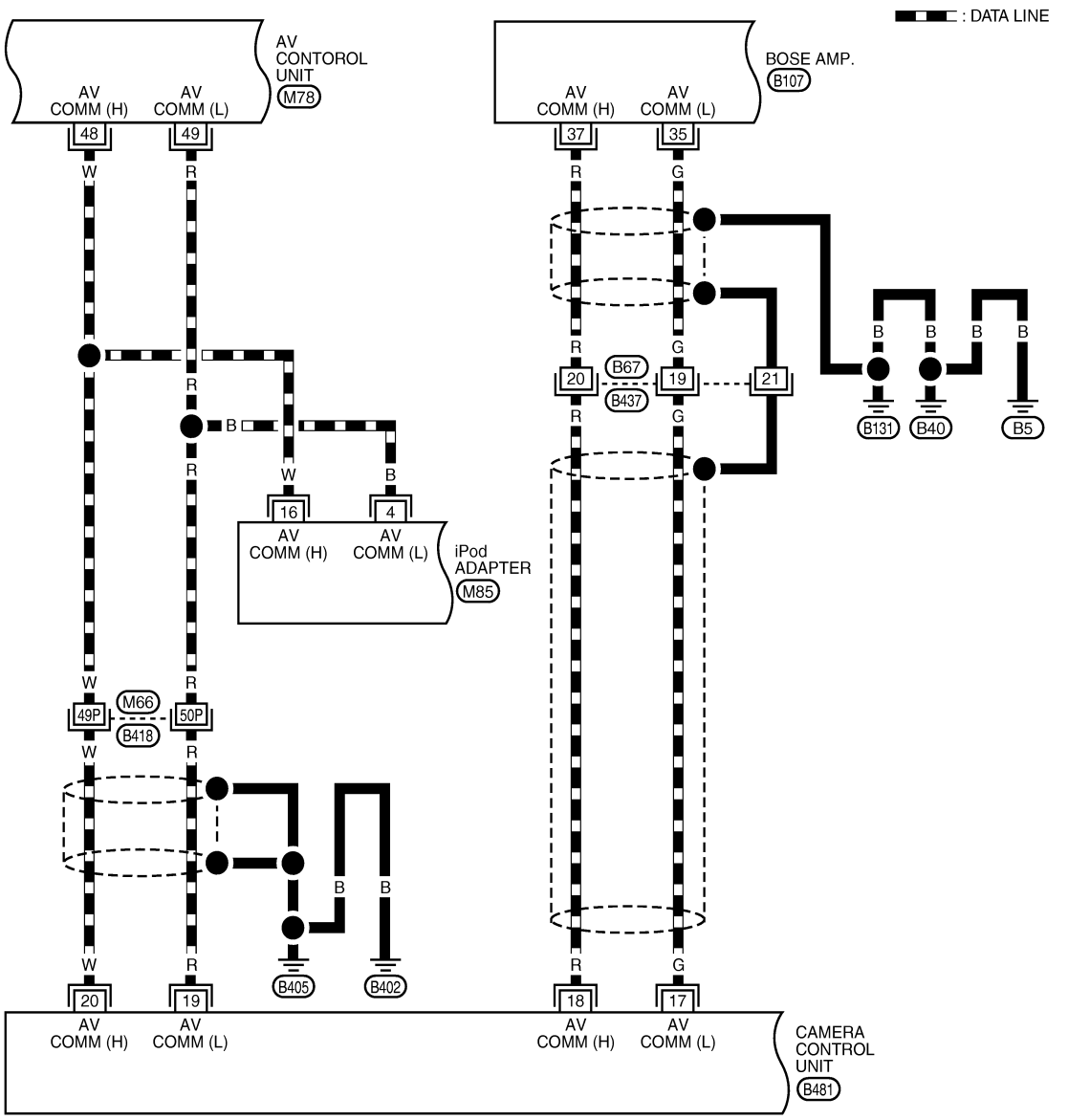

AV-AV-49
5A : WITH 5-SPEED AUTOMATIC TRANSMISSION
7A : WITH 7-SPEED AUTOMATIC TRANSMISSION
IGNITION SWITCH ON OR START (via PDU)
FUSE BLOCK (J/B) M4
10A 14
5A
REFER TO PG-POWER & PDU.
BR
2G M15
E108
B/R
B/R B/R
1 3
BACK-UP LAMP RELAY E19
2 5
R/L LG
LG 5 LG
E105 B3
LG N TO AV-AV-62
2 E12
F3
R/L
7A
5A
R/L
7
7 F521
REV LAMP RLY
TCM (TRANSMISSION CONTROL MODULE)
A/T ASSEMBLY F42 : 7A
R/L
7
O
7
REV LAMP RLY
TCM (TRANSMISSION CONTROL MODULE) F502
A/T ASSEMBLY F42 : 5A
LG B2
60M M13
O
MICROPHONE R52
MIC VCC MIC SIG SHIELD
4 1 2
R51
8 M181 7 6
O W
O O W
37 26 28 27
RV MIC VCC MIC SIG SHIELD
AV CONTROL UNIT M78
M78 W
E19 L
F3 B
F42 G
F502 GR
F521 G
B3 W
R51 W
R52 W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

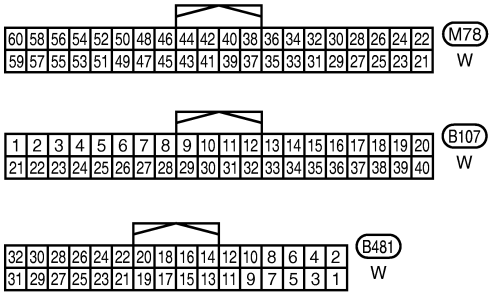
TKWT8295E

AV-AV-50


: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM)
E8
10A
82
43
REFER TO PG-POWER & PDU.
G/B
E108
58G
M15
GR
DATA LINK CONNECTOR
M60
6
14
UNIFIED METER AND A/C AMP.
M64, M65
CAN-H
CAN-L
8P/R
56
72
28
L
P
LG
LG/B
P
TO AV-AV-62
LG
L
P
TO LAN-CAN
LG
LG
TO DI-METER
G
GR
L
P
3
4
5
IGN
CAN-H
CAN-L
STEERING ANGLE SENSOR
M47
GND
2
B
39
40
BCM (BODY CONTROL MODULE)
M1
52
53
38
SPEED
AV CONTROL UNIT
M78
PKB
36
V
TO DI-WARN
39G
M15
E108
V/R
1
PARKING BRAKE SWITCH
E110
APPLIED
RELEASED
M16
M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47
W
M60
W
M64
W
M65
W
H.S.
M78
W
E8
W
E110
W
TKWT6729E

AV-AV-51

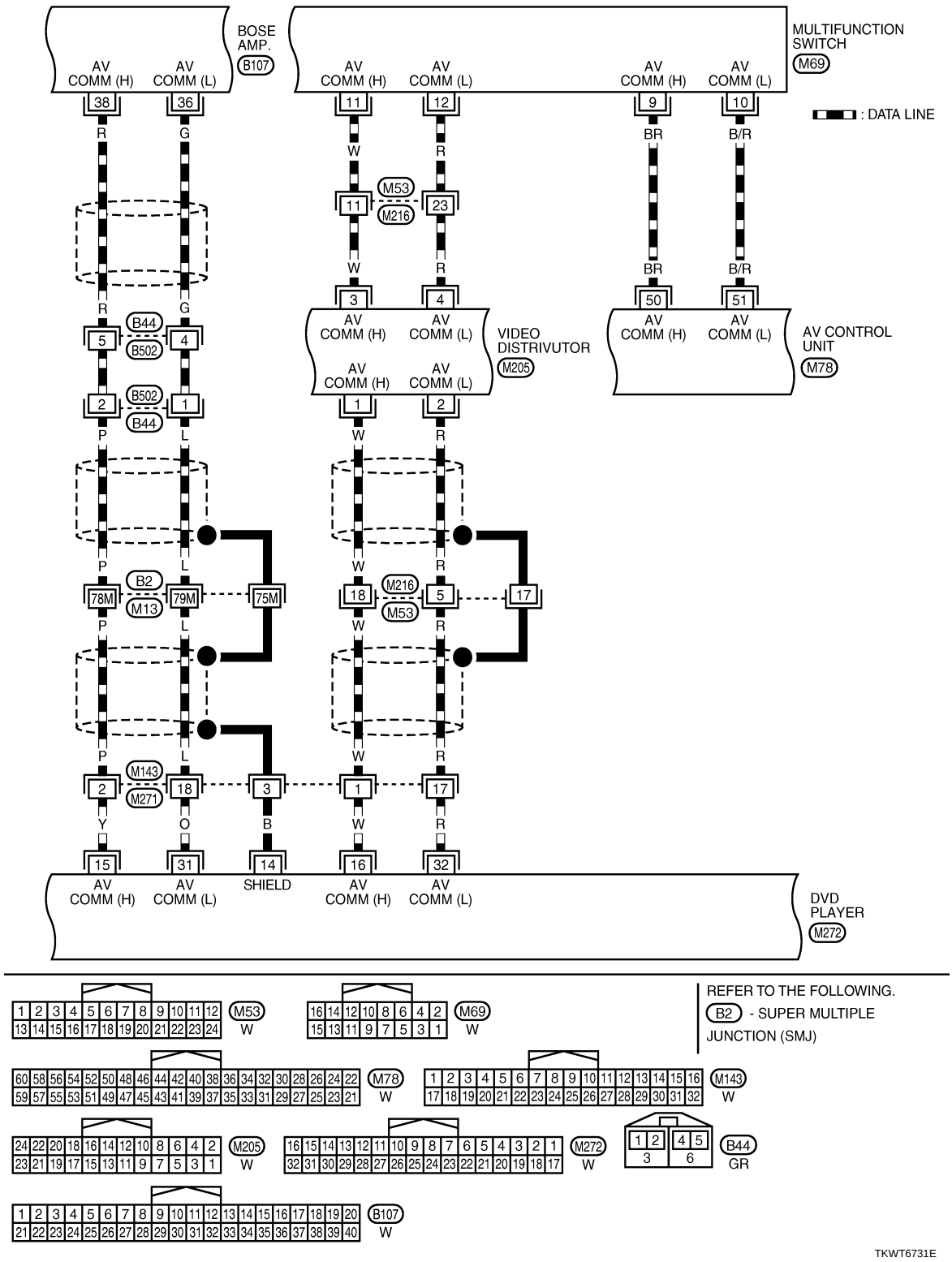




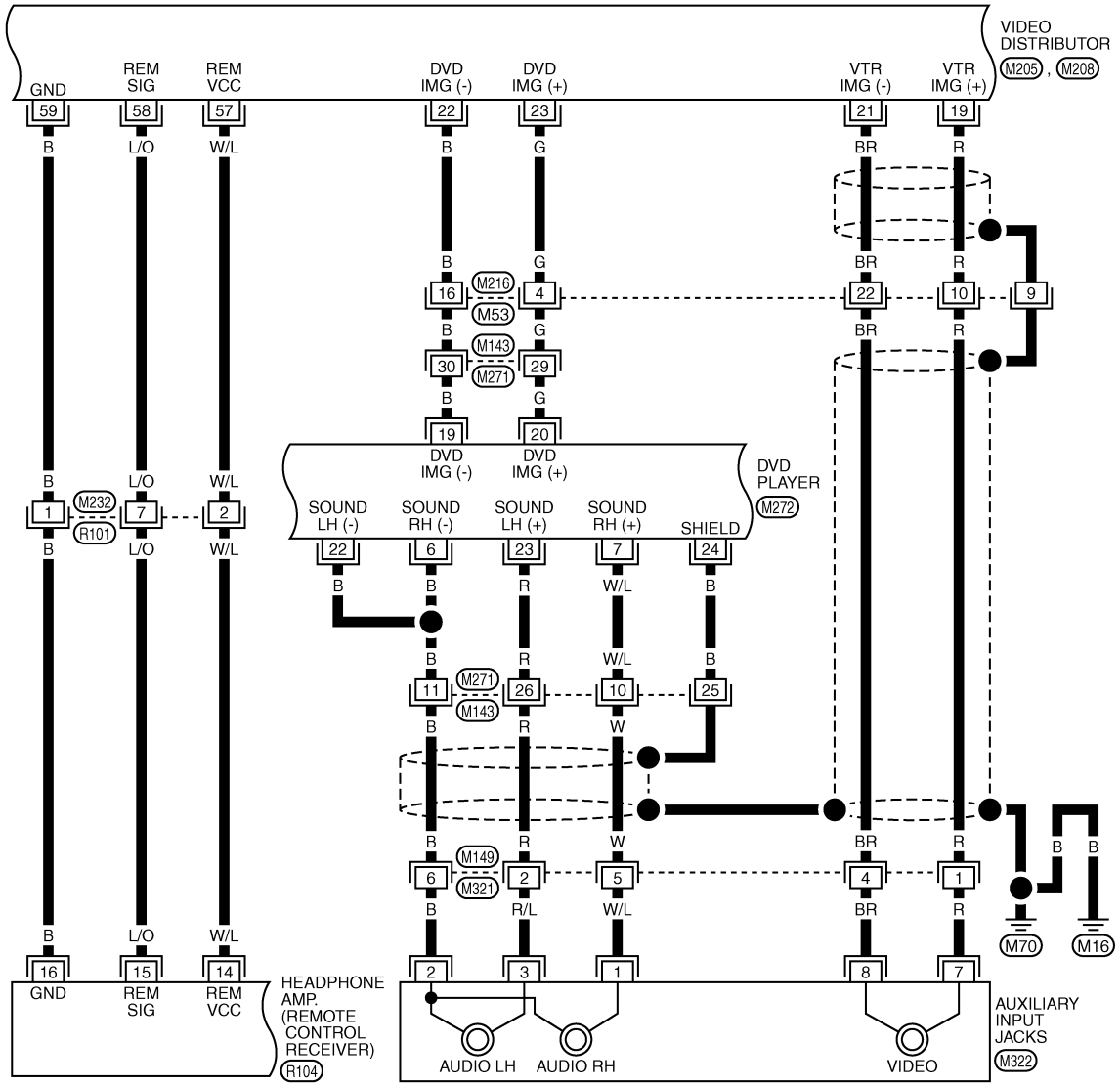
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6730E

AV-AV-52

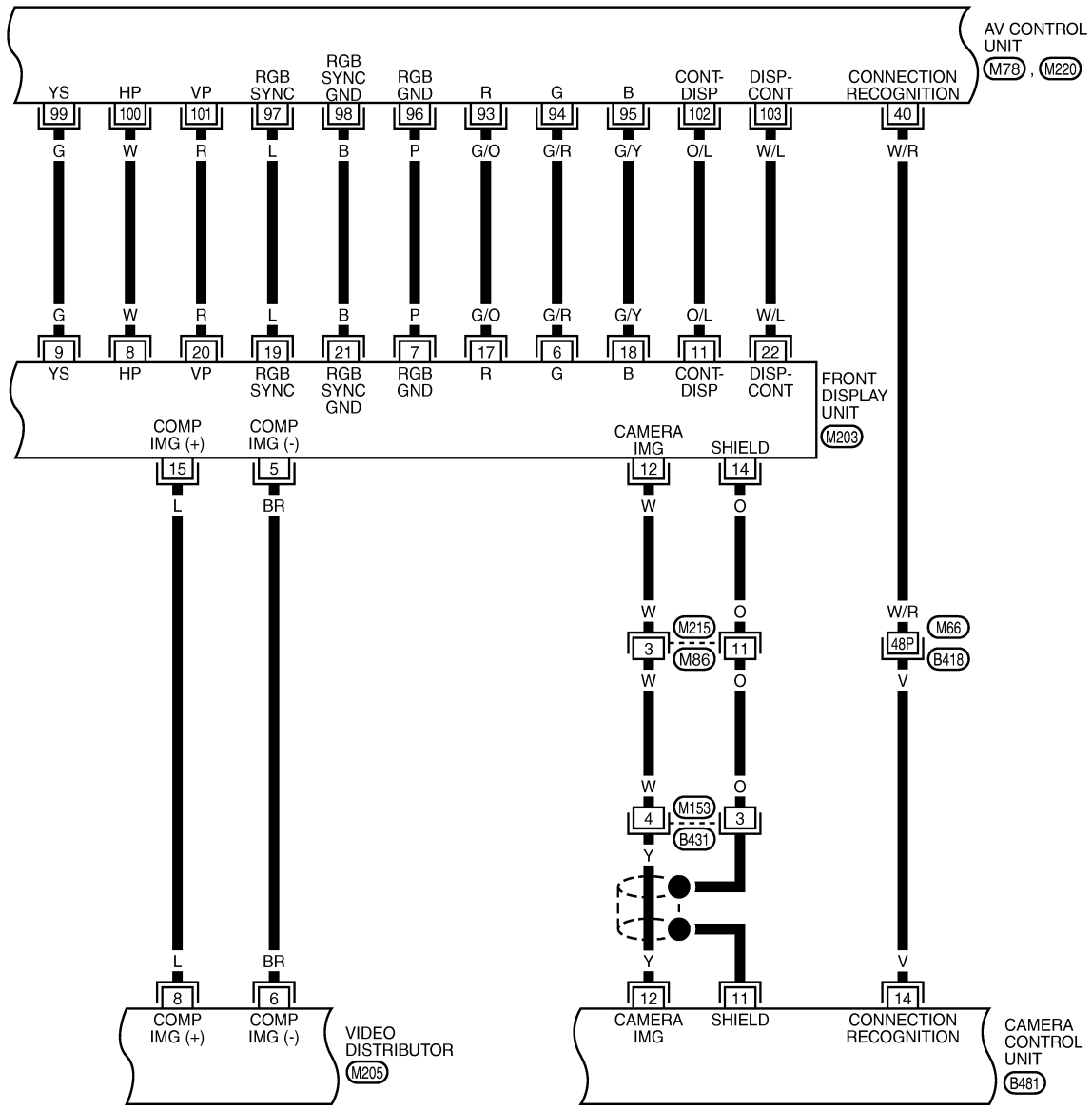

BOSE AMP. B107
MULTIFUNCTION SWITCH M69
: DATA LINE
VIDEO DISTRIVUTOR M205
AV CONTROL UNIT M78
DVD PLAYER M272
AV COMM (H)
AV COMM (L)
SHIELD
B44
B502
B2
M13
M53
M216
M143
M271
75M
78M
79M
REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)
M53 W
M69 W
M78 W
M143 W
M205 W
M272 W
B44 GR
B107 W
TKWT6731E

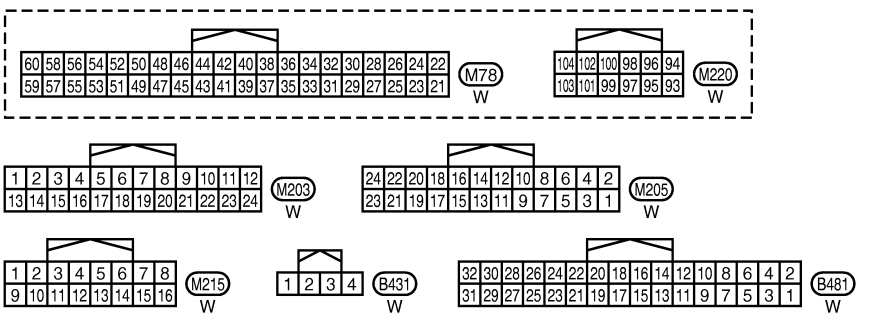
AV-AV-53



TKWT8296E

AV-AV-54

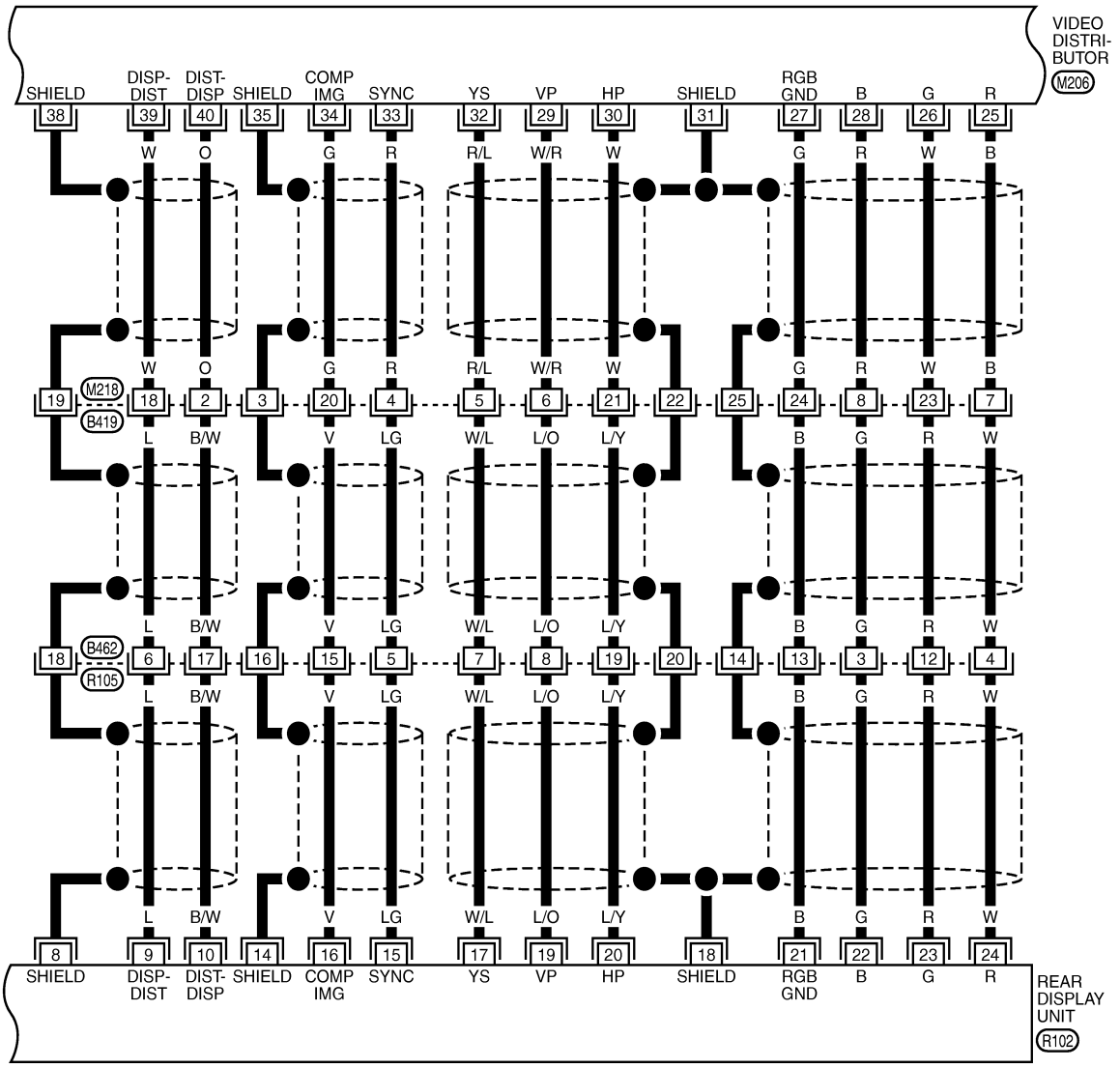




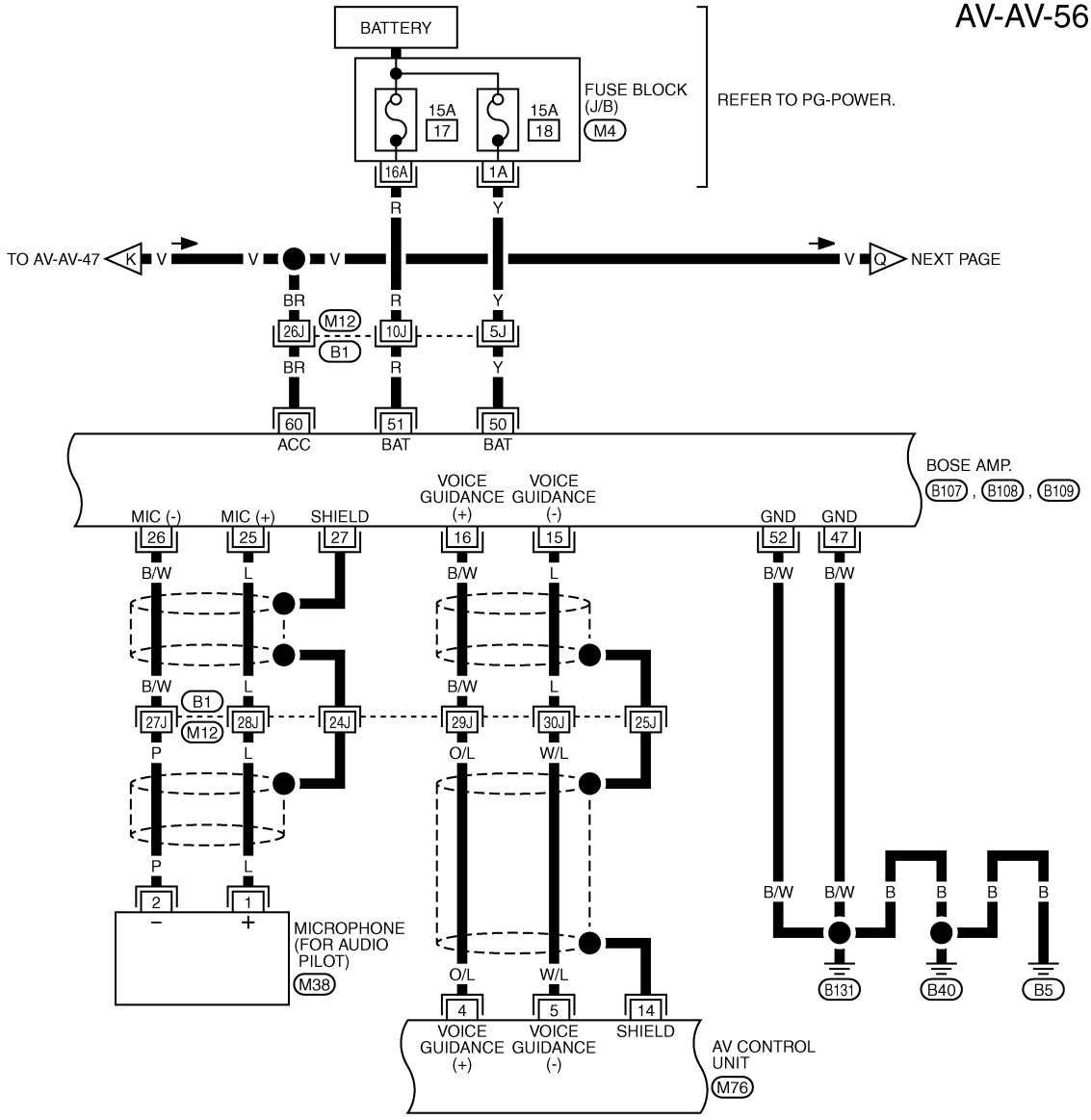
REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

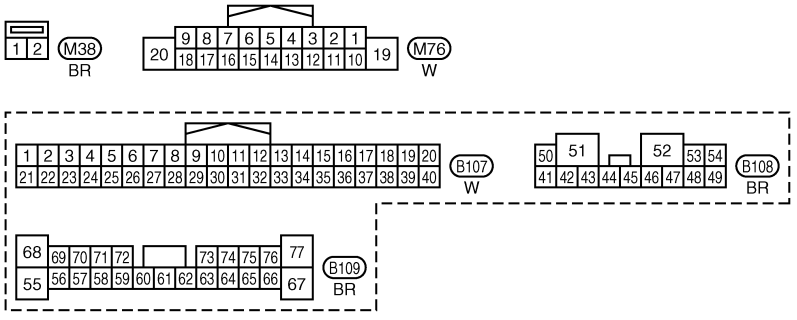
TKWT6733E

AV-AV-55


VIDEO DISTRI-BUTOR
M206
SHIELD 38
DISP-DIST 39
DIST-DISP 40
SHIELD 35
COMP IMG 34
SYNC 33
YS 32
VP 29
HP 30
SHIELD 31
RGB GND 27
B 28
G 26
R 25
M218
B419
B462
R105
REAR DISPLAY UNIT
R102
TKWT6734E

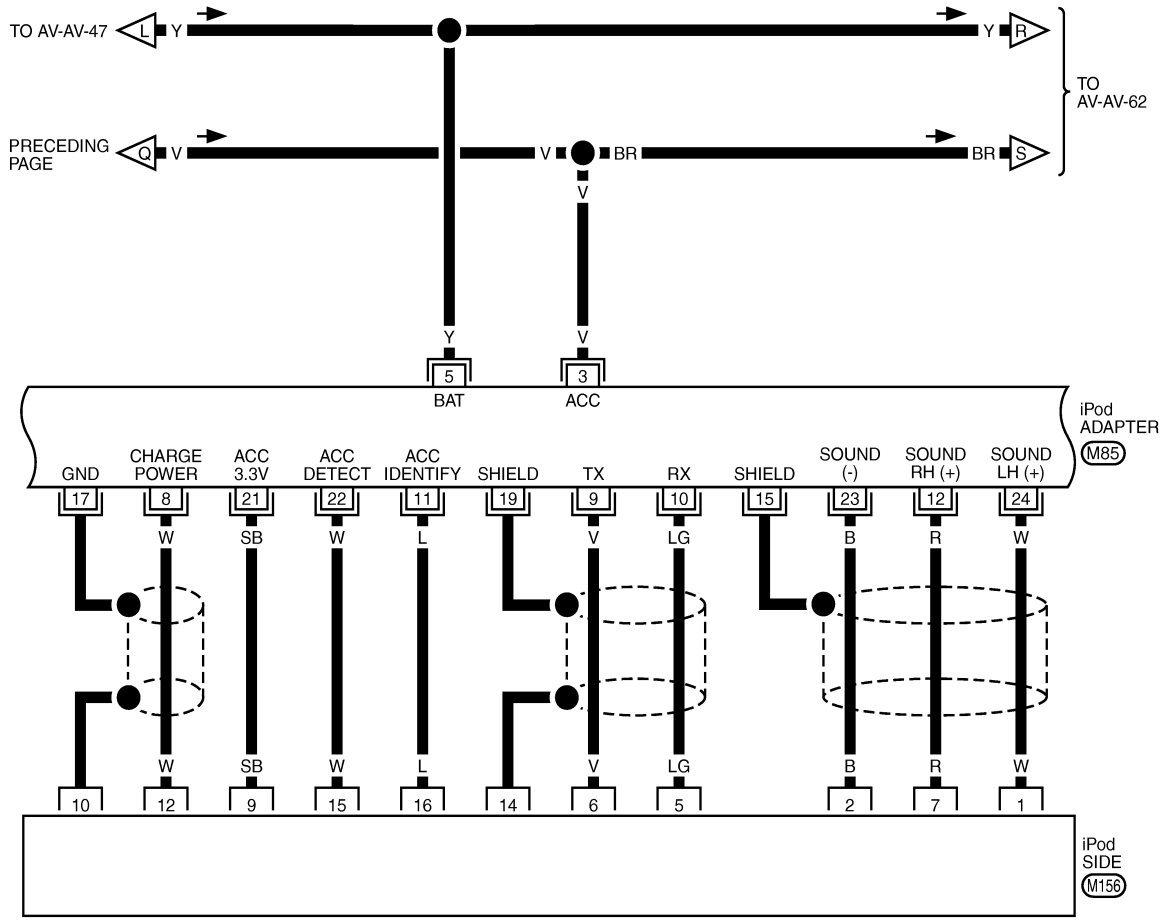
AV-AV-56

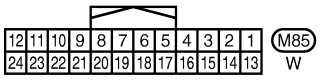


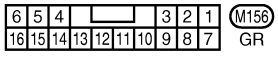


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8297E

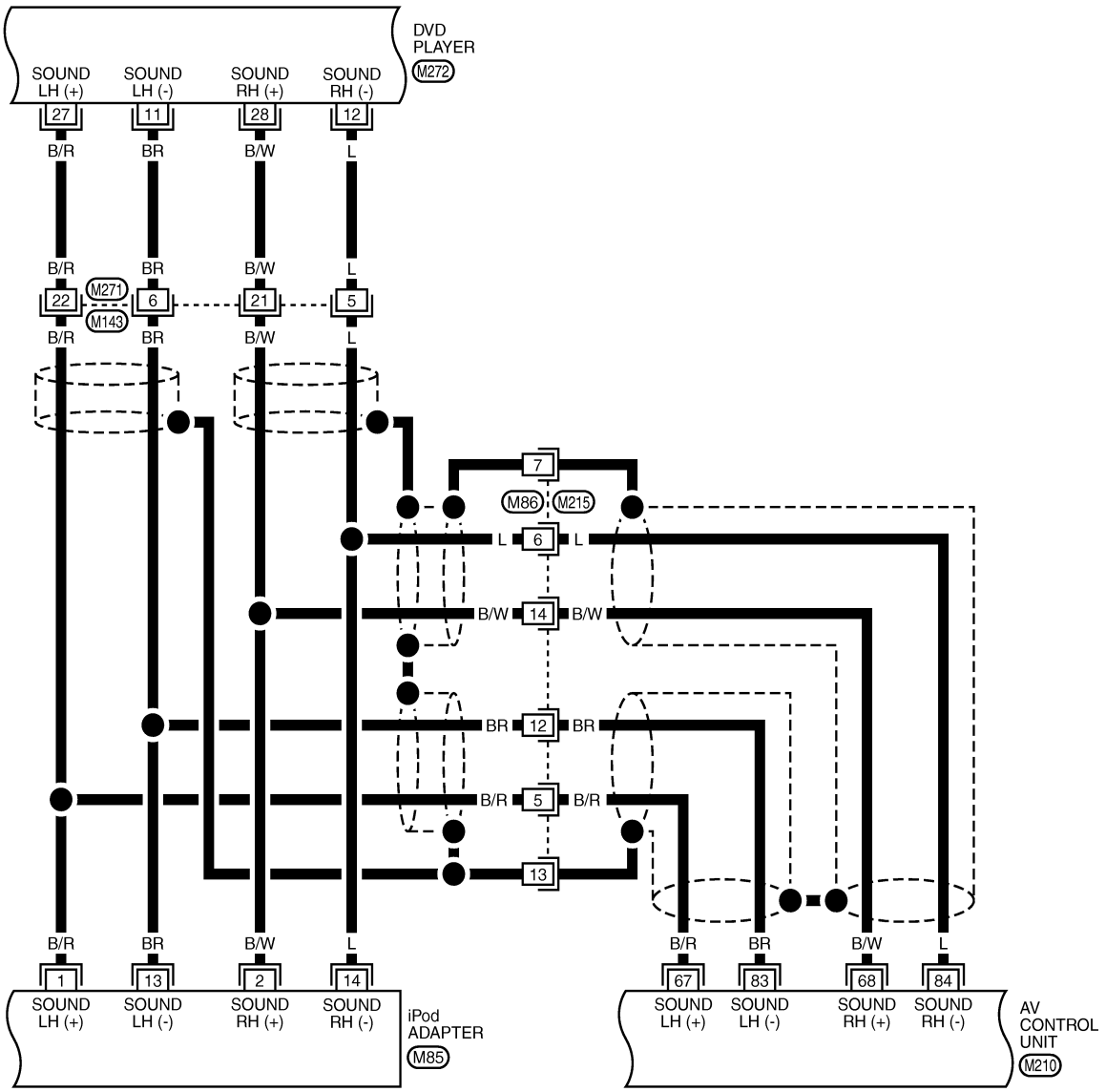

TO AV-AV-47
L
Y
Y
R
TO
AV-AV-62
PRECEDING
PAGE
Q
V
V
BR
BR
S
V
Y
V
5
BAT
3
ACC
iPod
ADAPTER
M85
GND
CHARGE
POWER
ACC
3.3V
ACC
DETECT
ACC
IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND
(-)
SOUND
RH (+)
SOUND
LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod
SIDE
M156

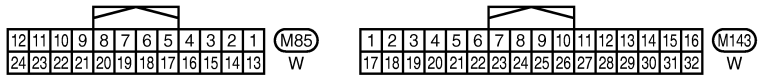

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W

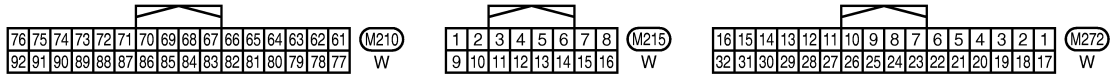

6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6737E

AV-AV-58

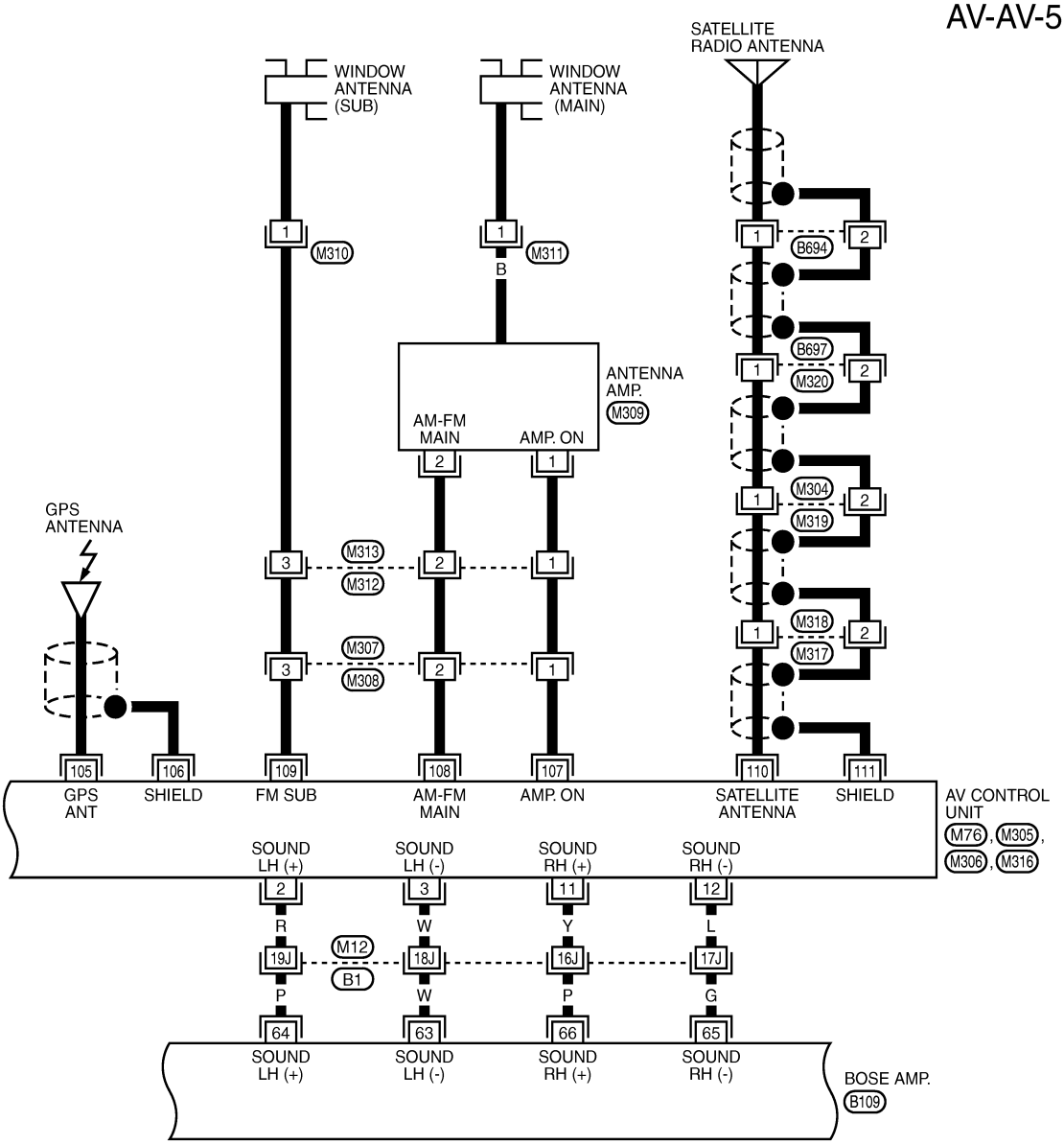


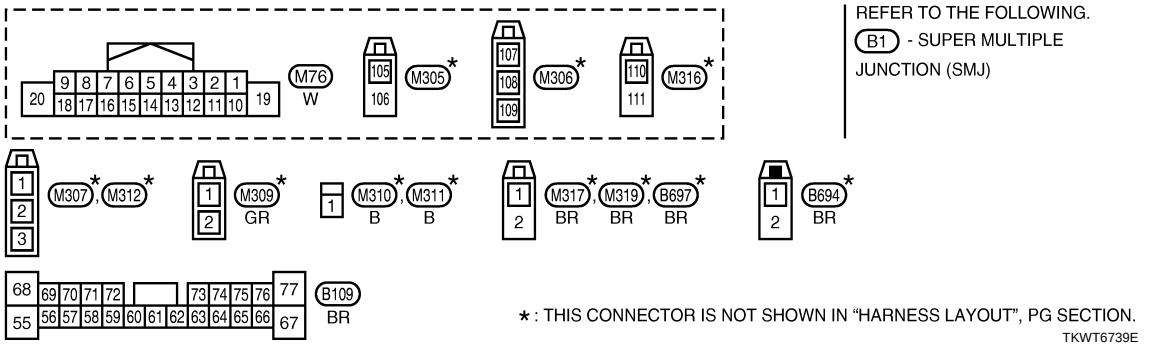




TKWT6738E

AV-AV-59



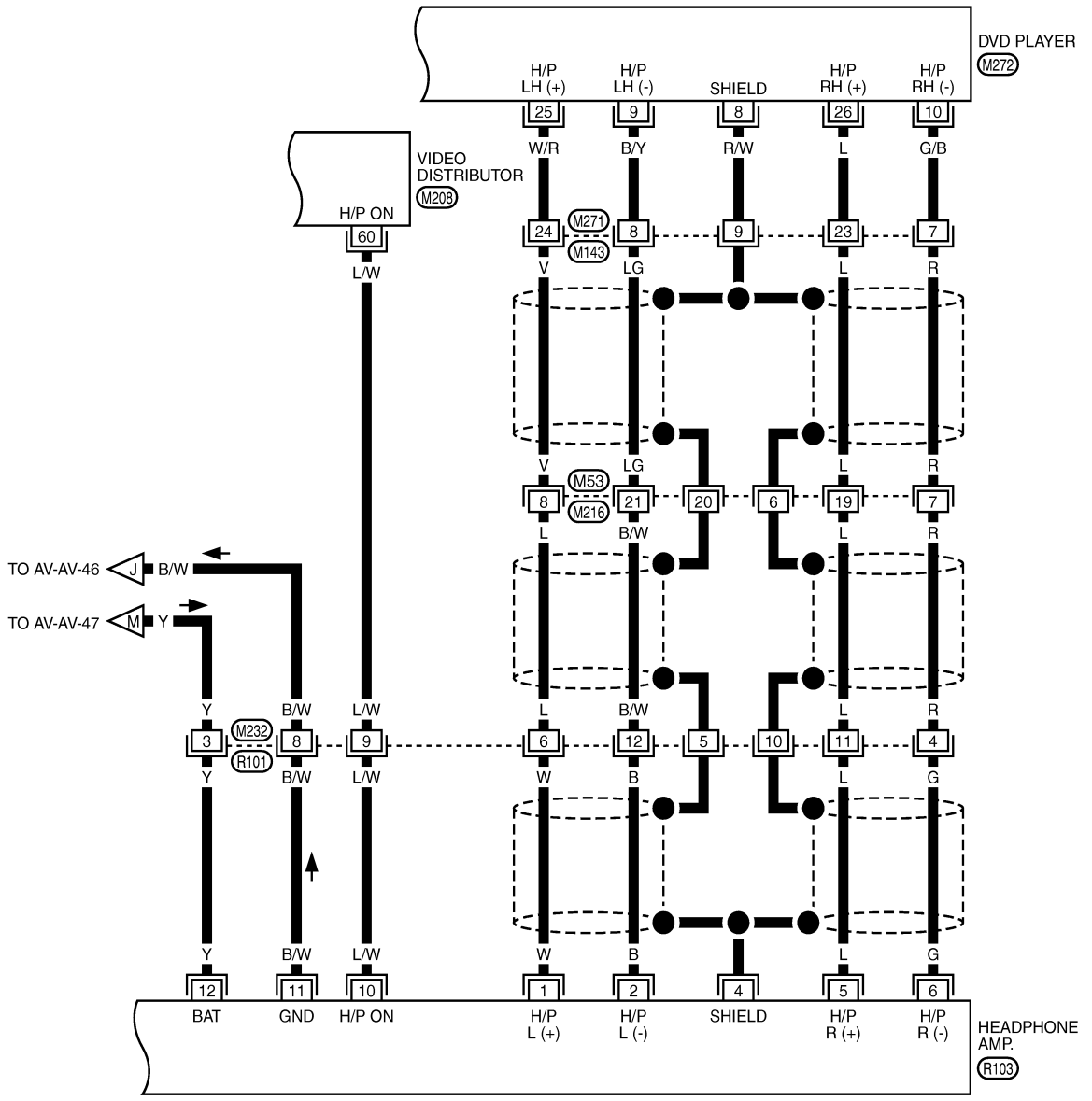


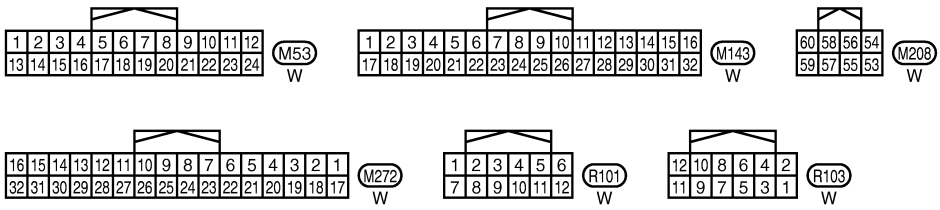
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.

TKWT6739E

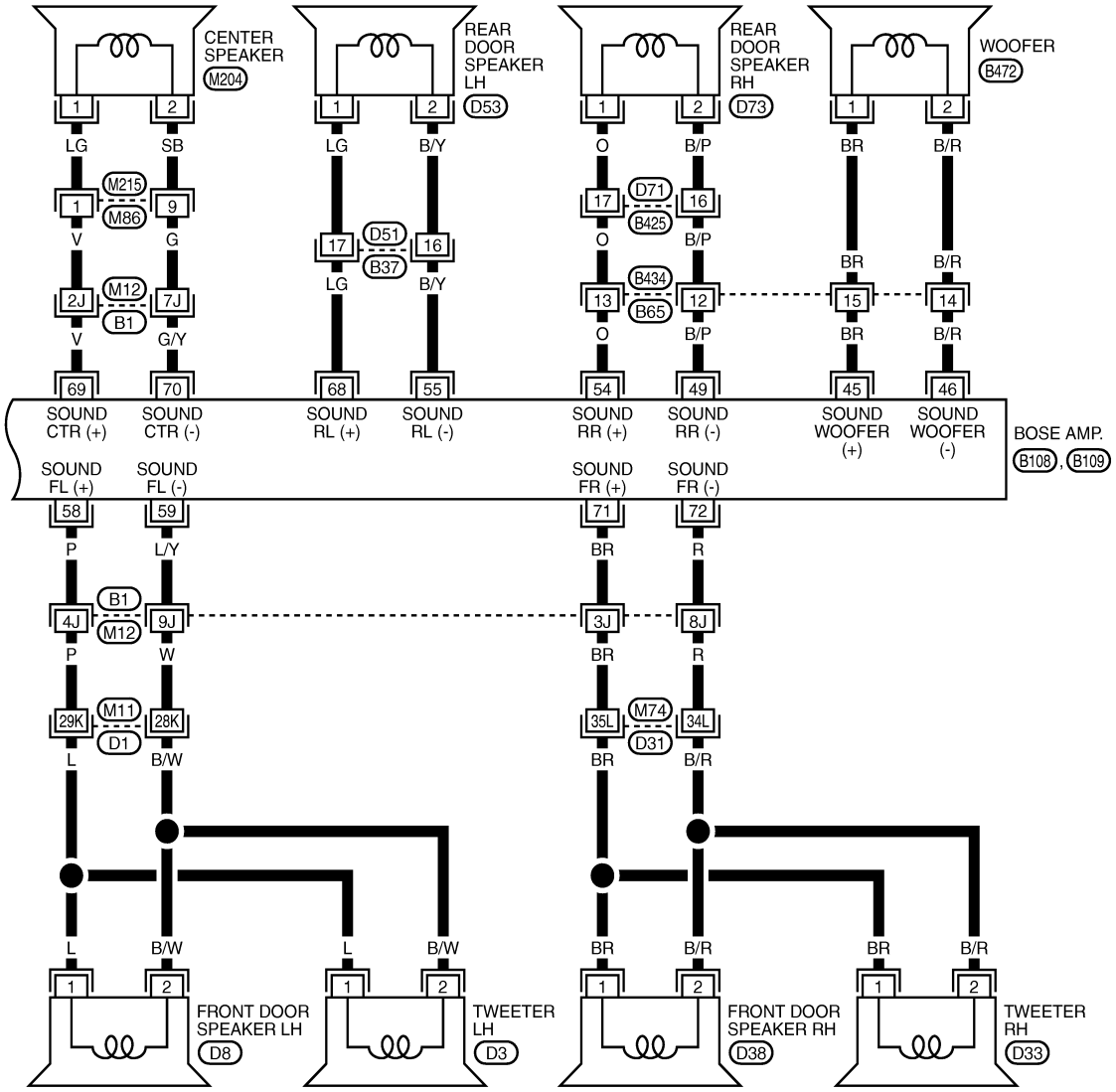
AV-AV-60



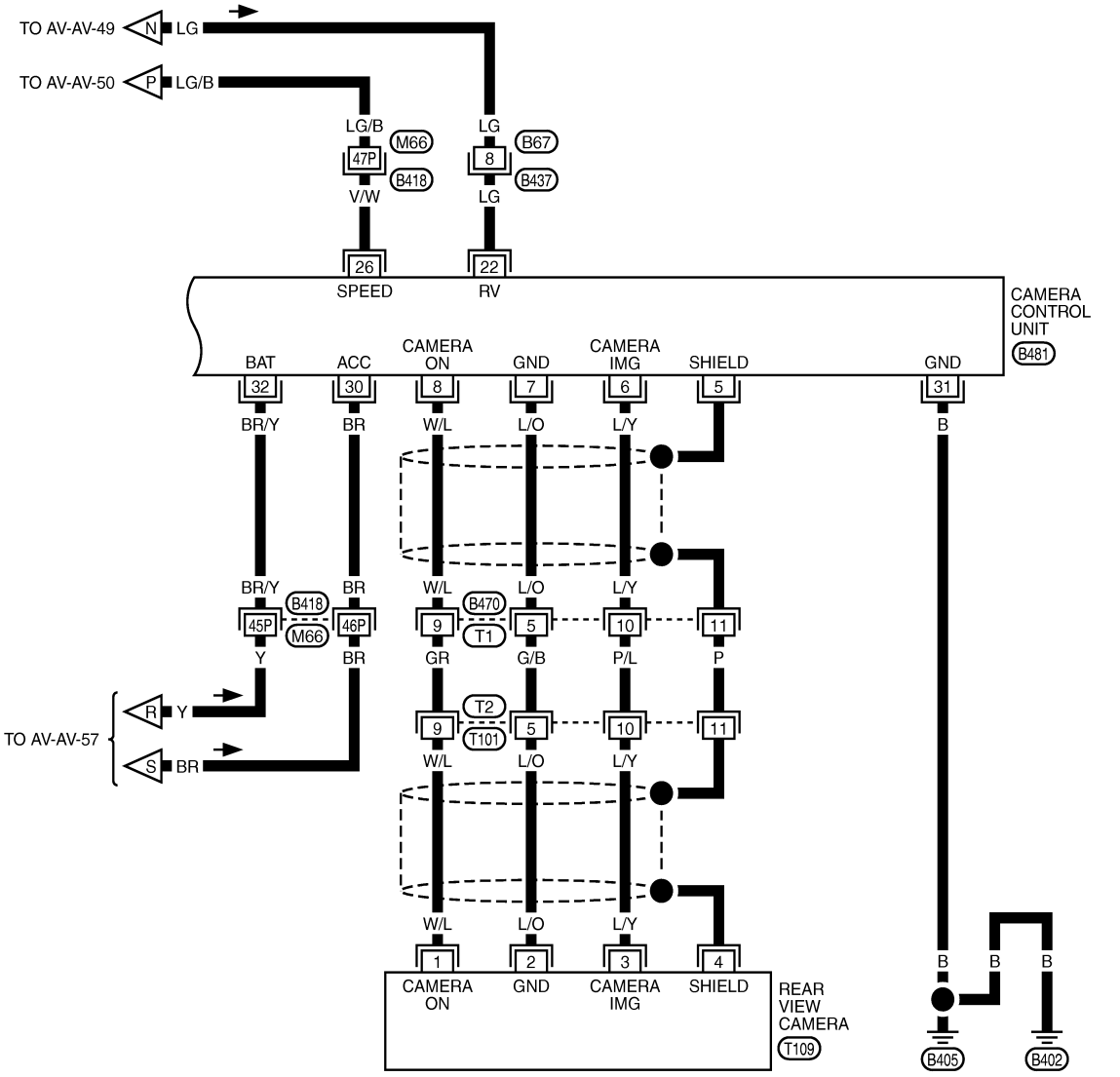


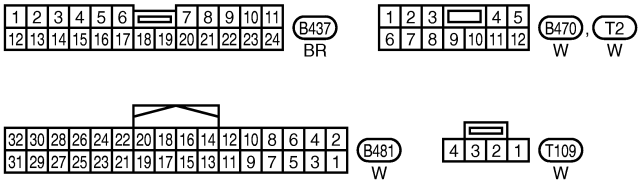
TKWT6740E

AV-AV-61


CENTER SPEAKER M204
REAR DOOR SPEAKER LH D53
REAR DOOR SPEAKER RH D73
WOOFER B472
SOUND CTR (+)
SOUND CTR (-)
SOUND RL (+)
SOUND RL (-)
SOUND RR (+)
SOUND RR (-)
SOUND WOOFER (+)
SOUND WOOFER (-)
BOSE AMP. B108, B109
SOUND FL (+)
SOUND FL (-)
SOUND FR (+)
SOUND FR (-)
FRONT DOOR SPEAKER LH D8
TWEETER LH D3
FRONT DOOR SPEAKER RH D38
TWEETER RH D33
REFER TO THE FOLLOWING.
B1, D1, D31 - SUPER MULTIPLE JUNCTION (SMJ)
TKWT6741E

AV-AV-62



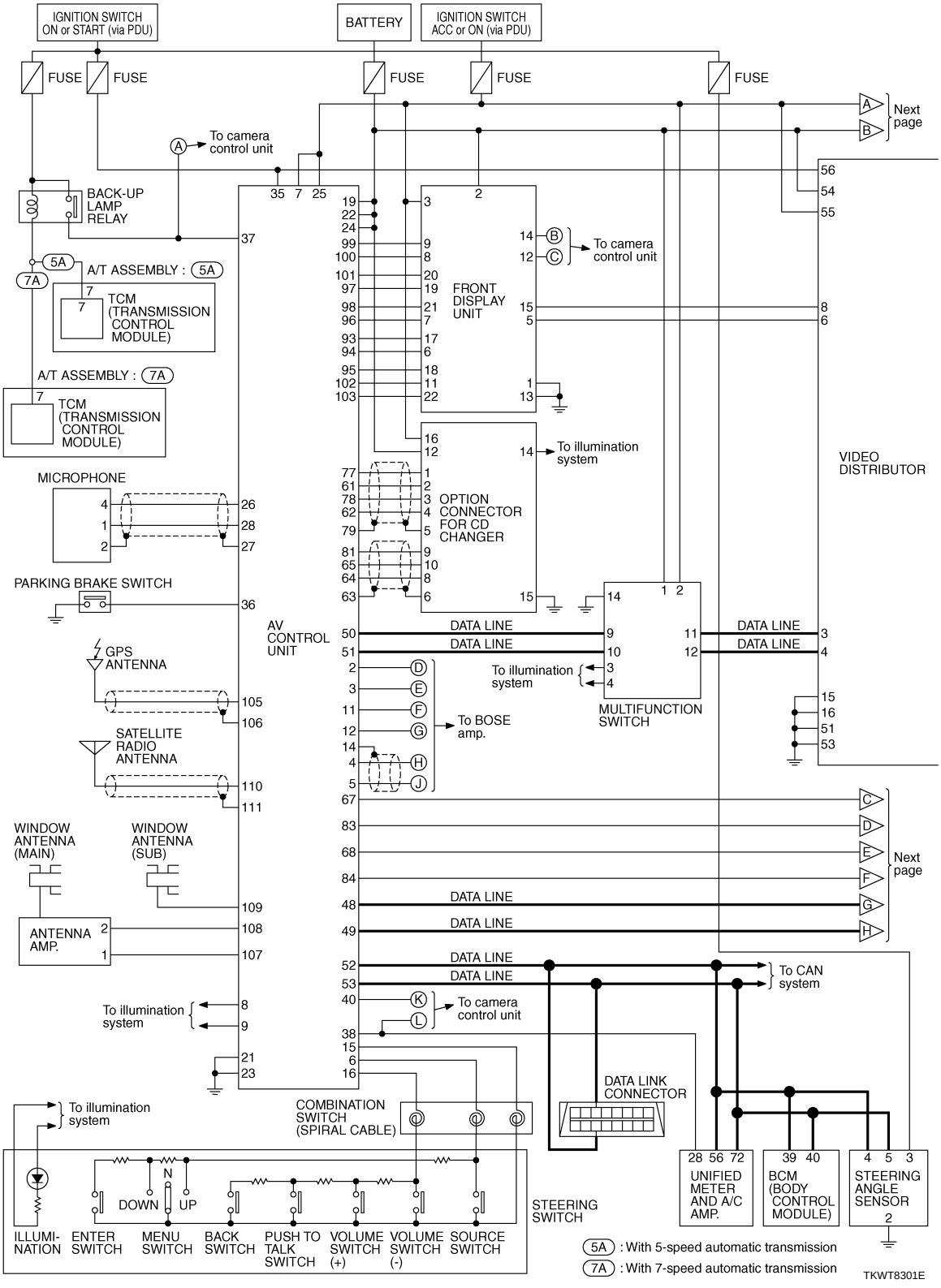


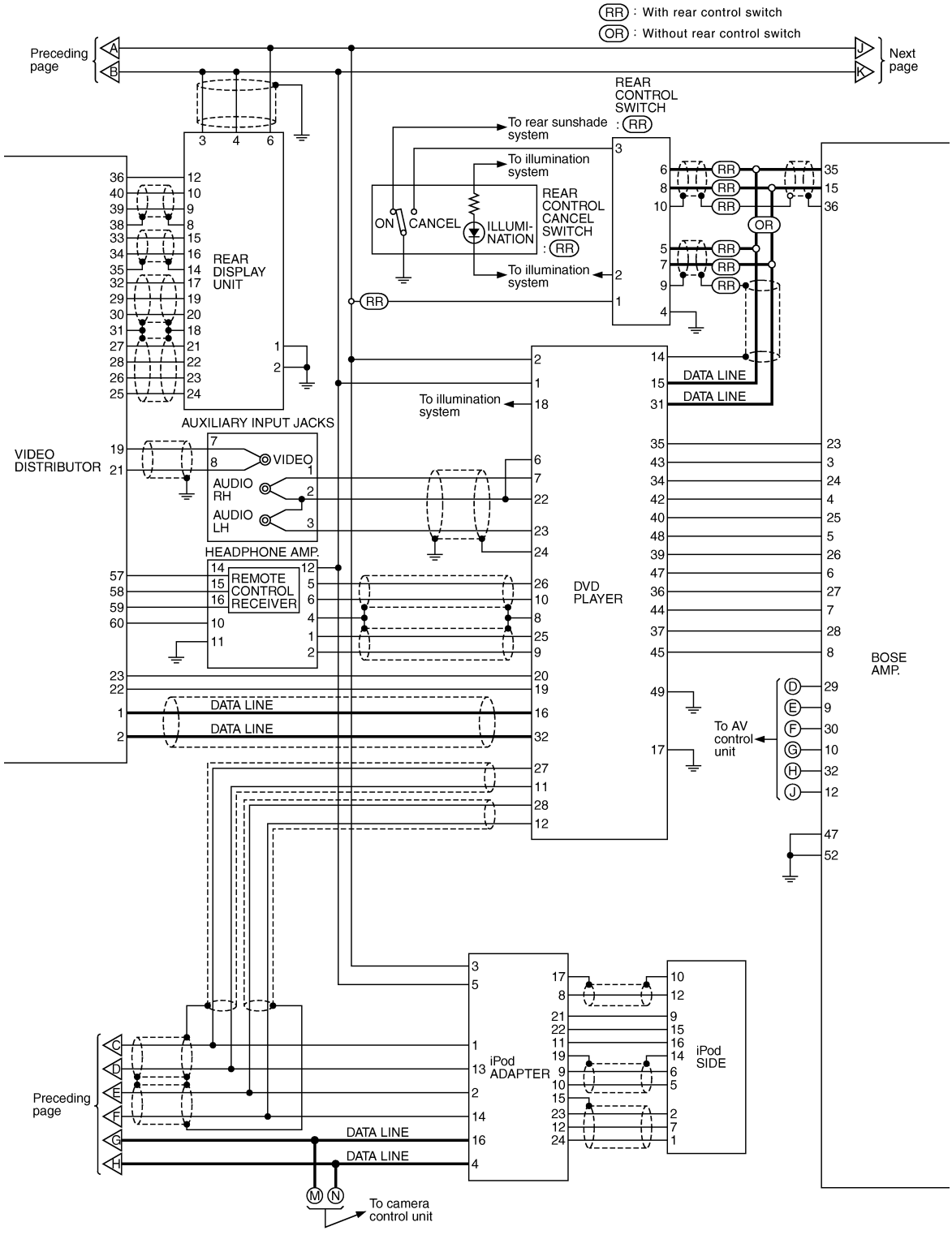
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

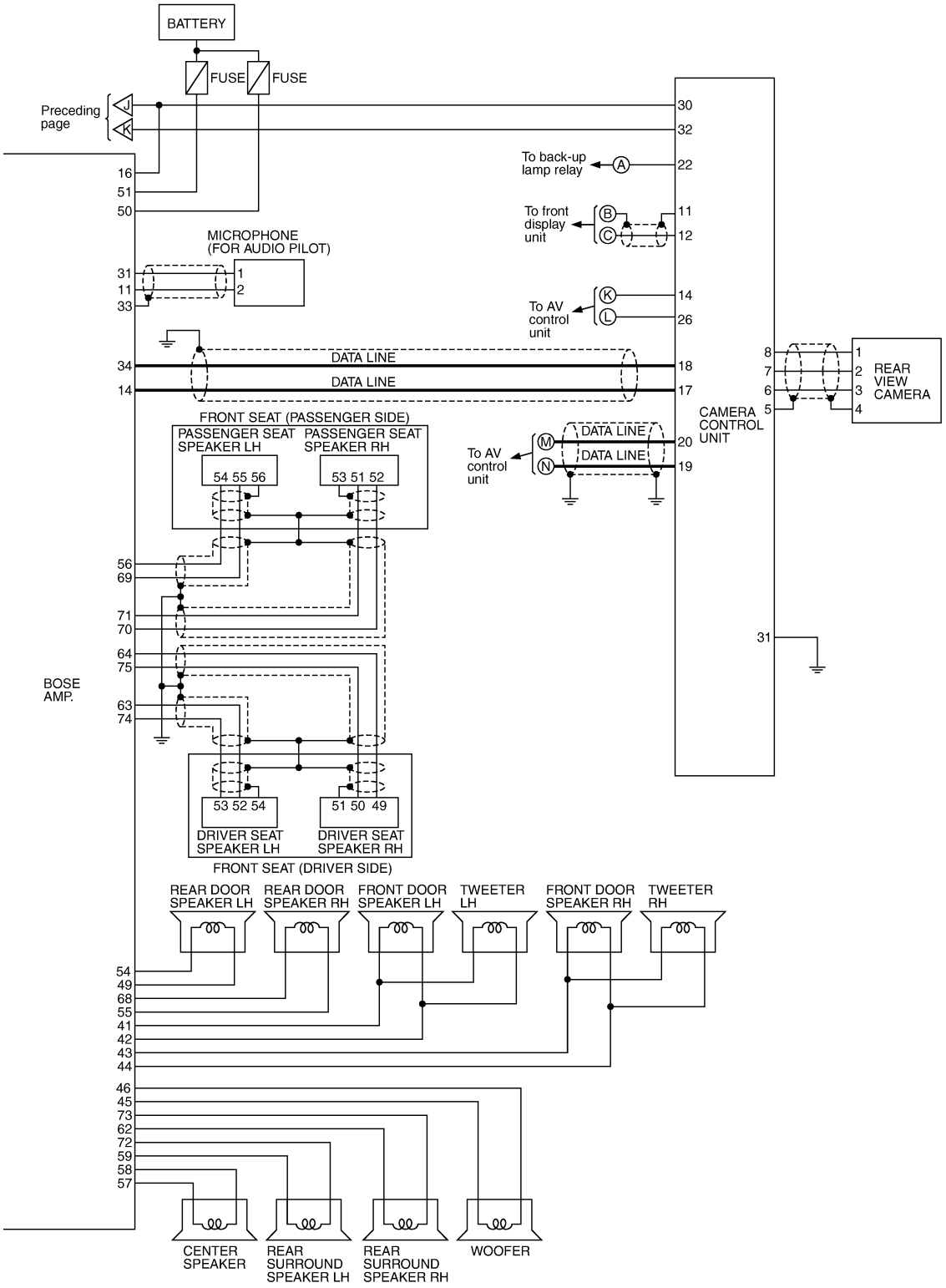
TKWT6742E

Schematic - BOSE 5.1ch Surround Audio System -

INFOID:0000000004156071




RR : With rear control switch
OR : Without rear control switch
Preceding page
Next page
REAR CONTROL SWITCH : RR
To rear sunshade system
To illumination system
REAR CONTROL CANCEL SWITCH : RR
ON
CANCEL
ILLUMI-NATION
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
DVD PLAYER
DATA LINE
BOSE AMP.
To AV control unit
iPod ADAPTER
iPod SIDE
To camera control unit
TKWT6744E



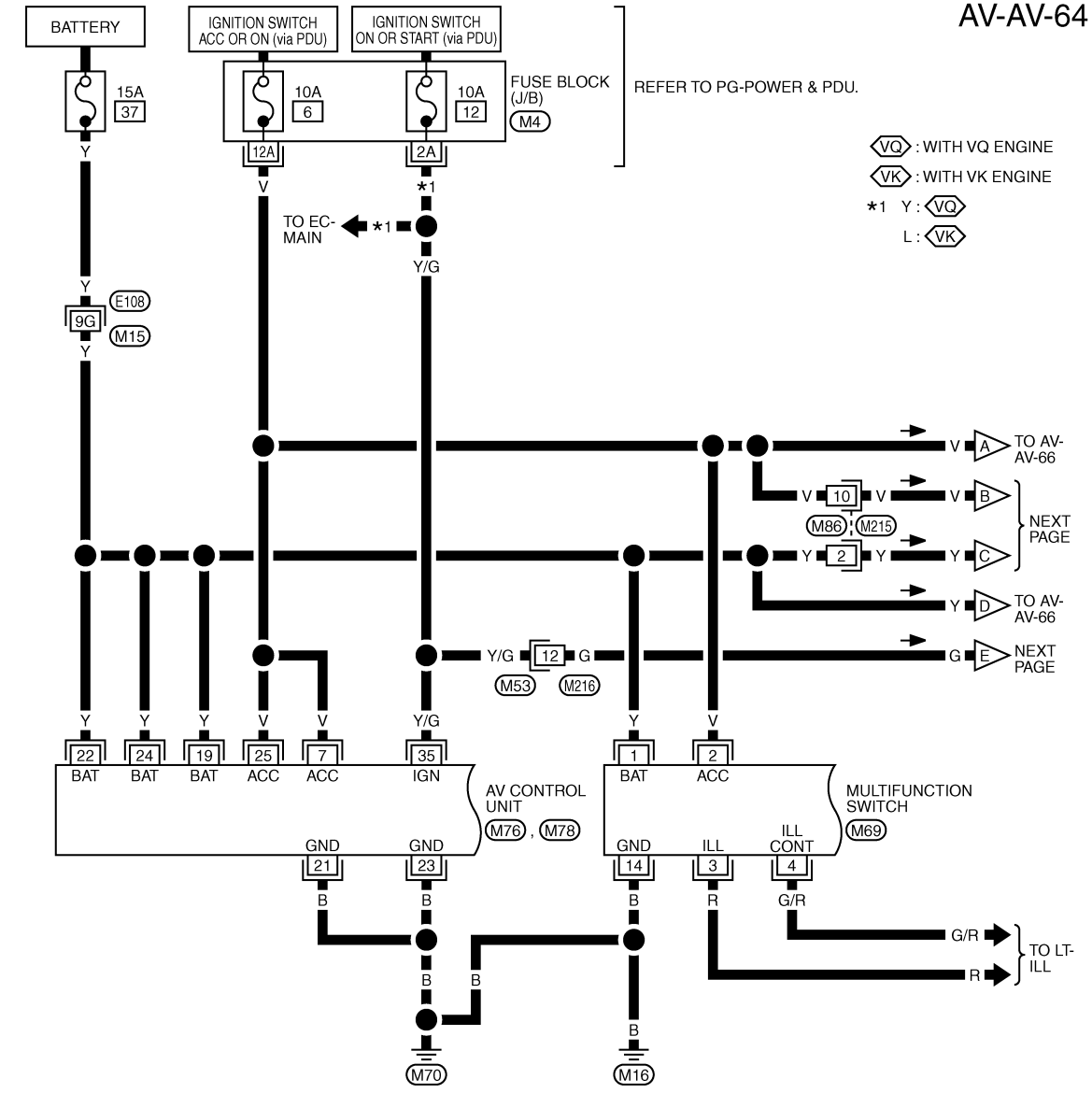
TKWT6745E

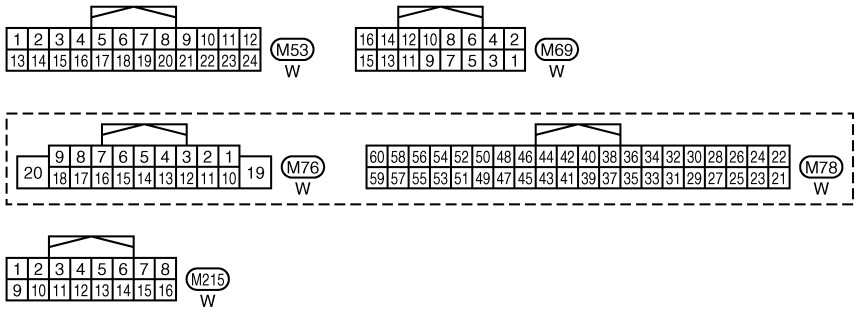
Wiring Diagram - AV - / BOSE Surround Audio 5.1ch System

INFOID:0000000004156072

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

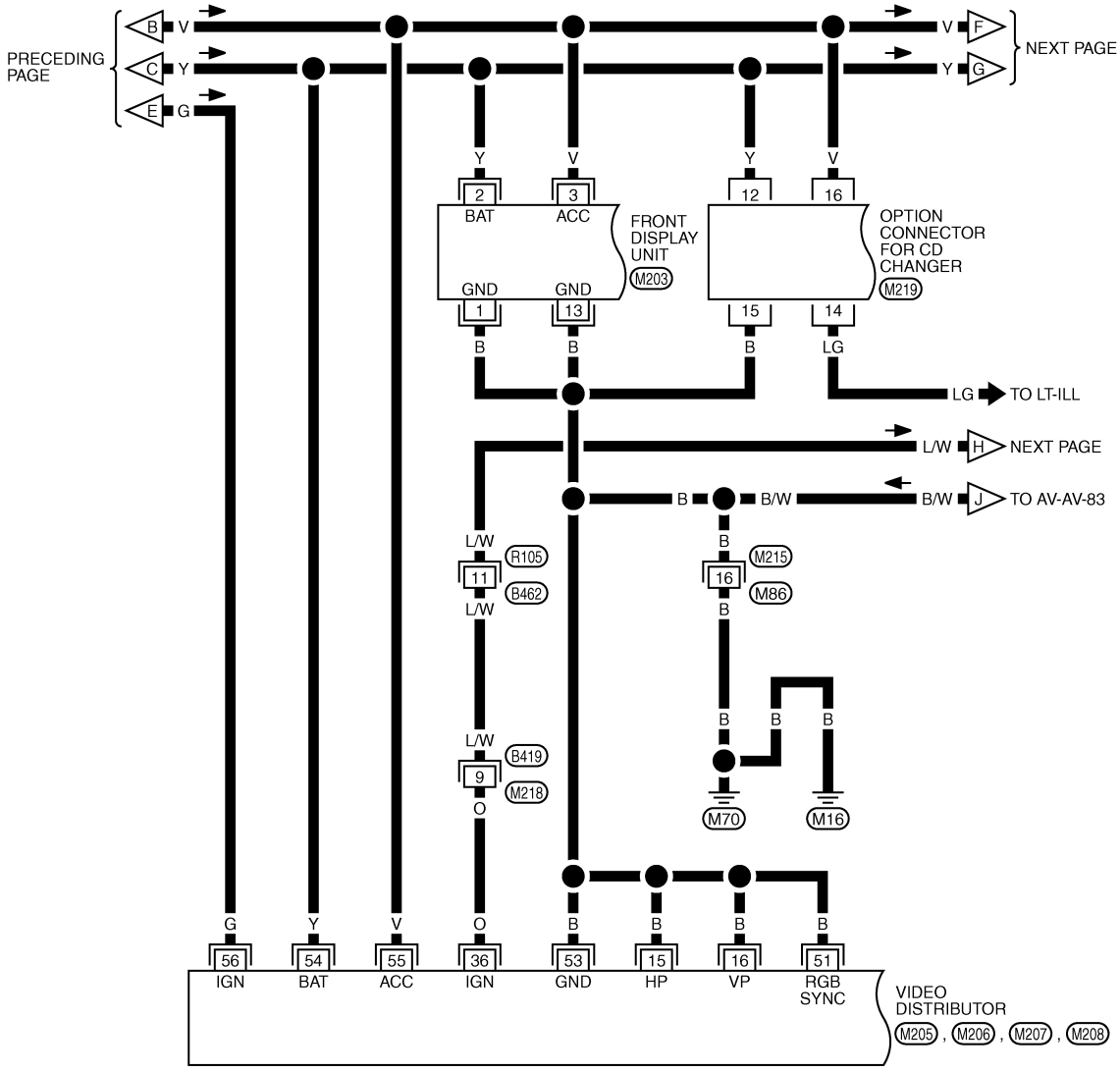


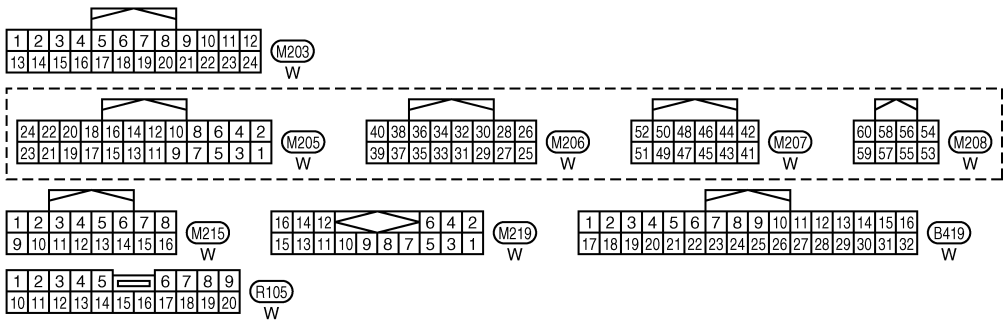


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8302E

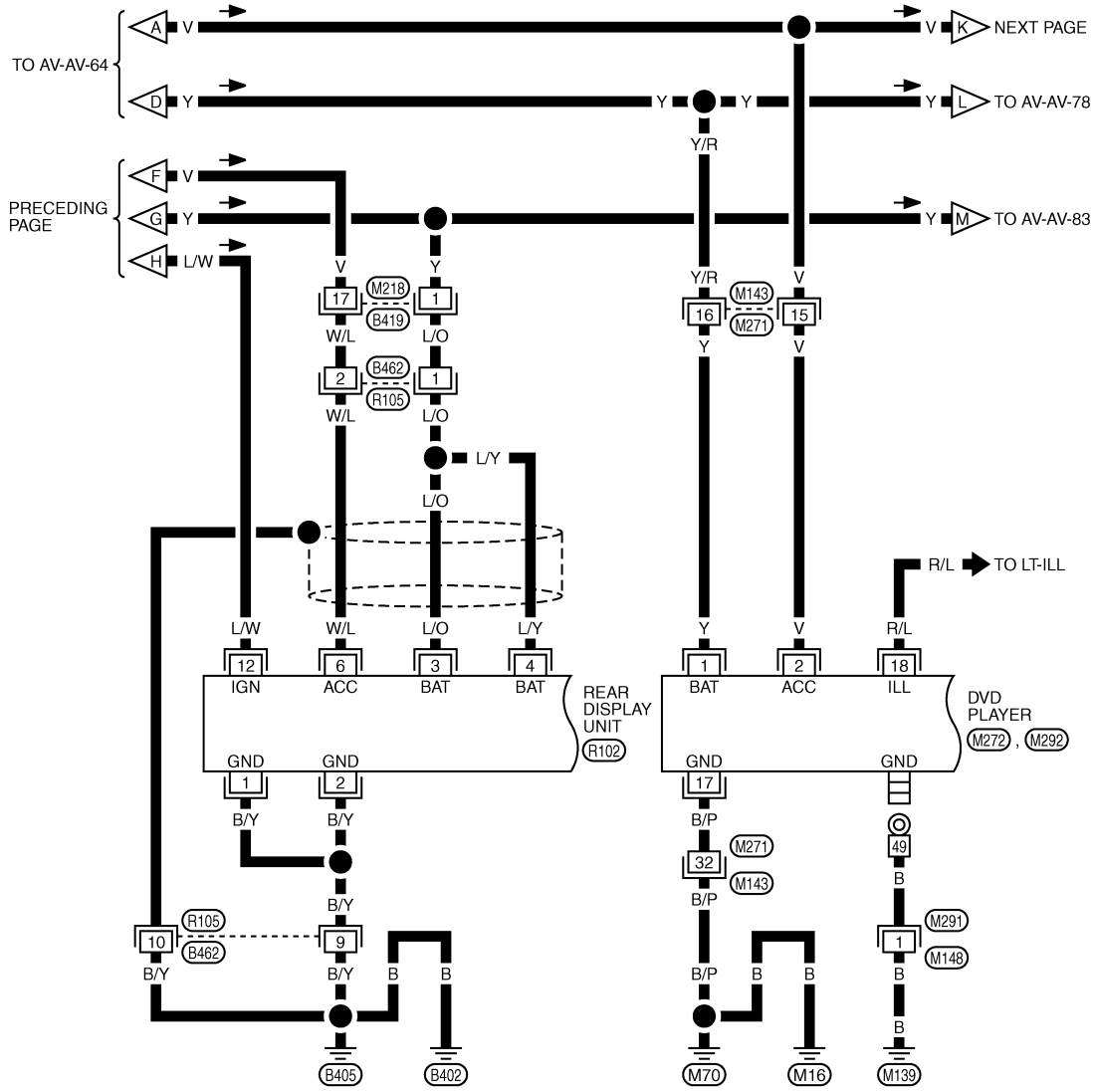
AV-AV-65

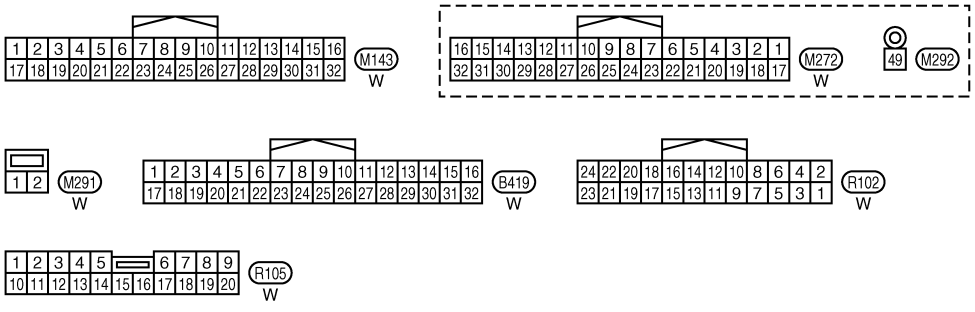




TKWT8303E

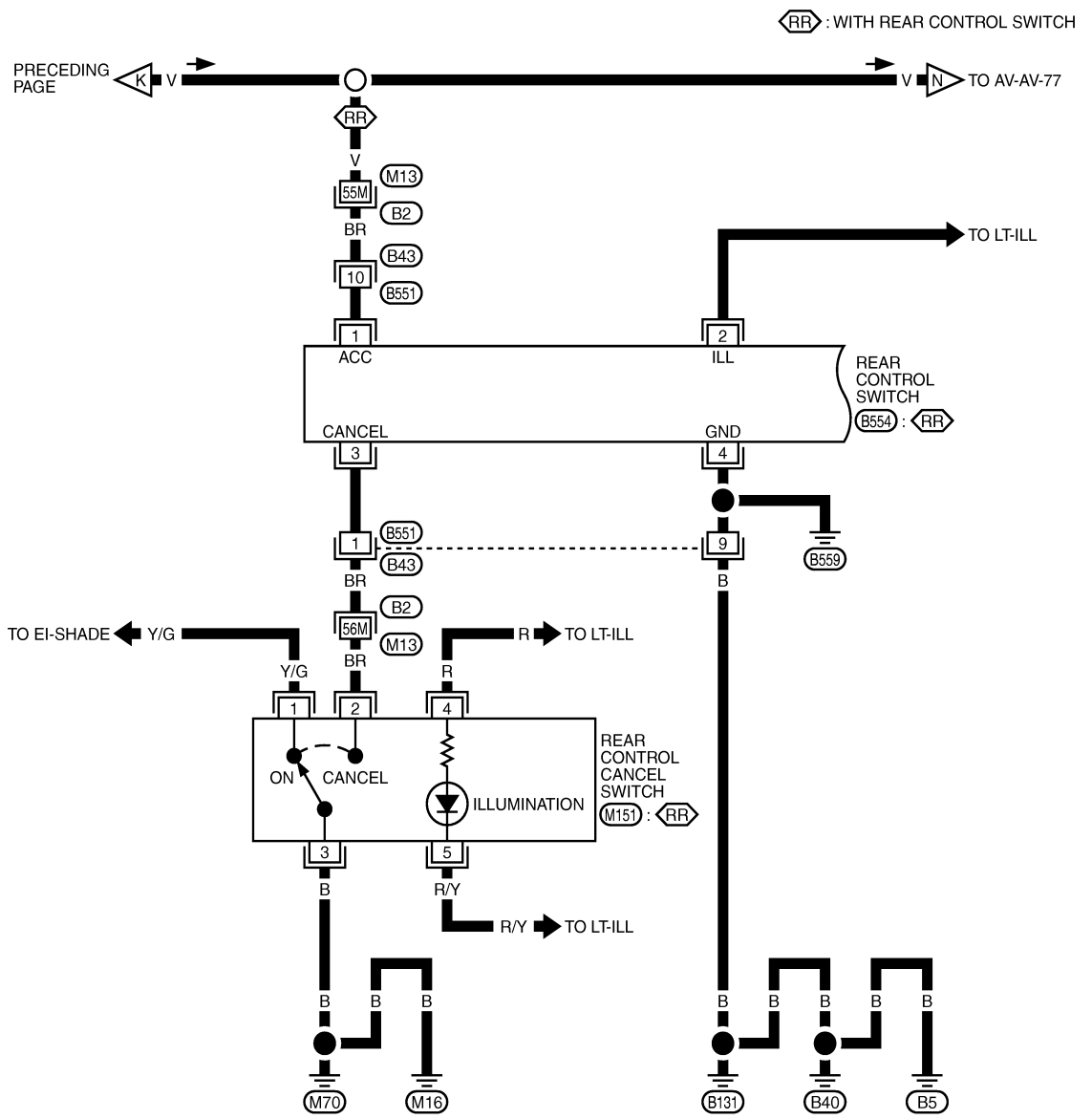
AV-AV-66

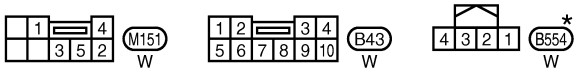




TKWT8304E

AV-AV-67



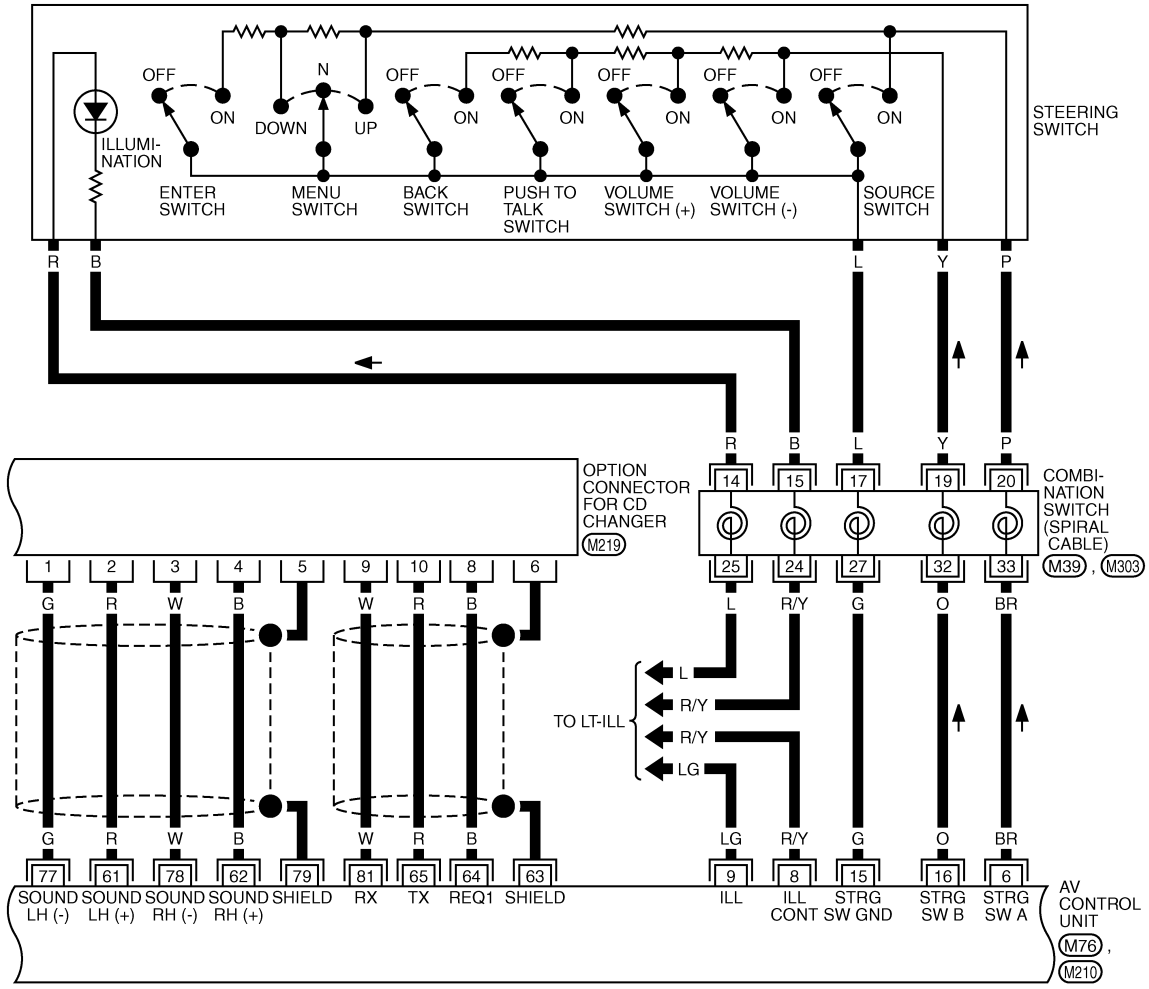


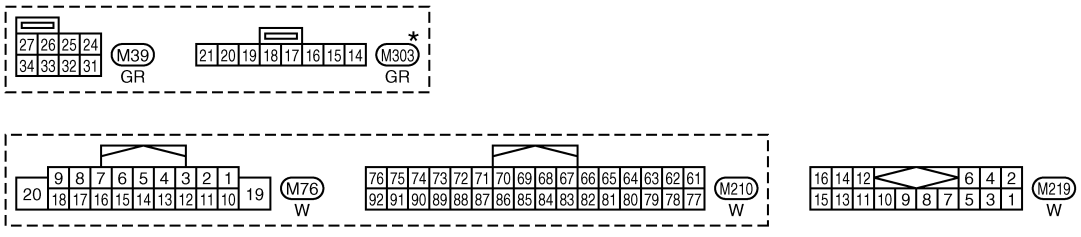
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6749E

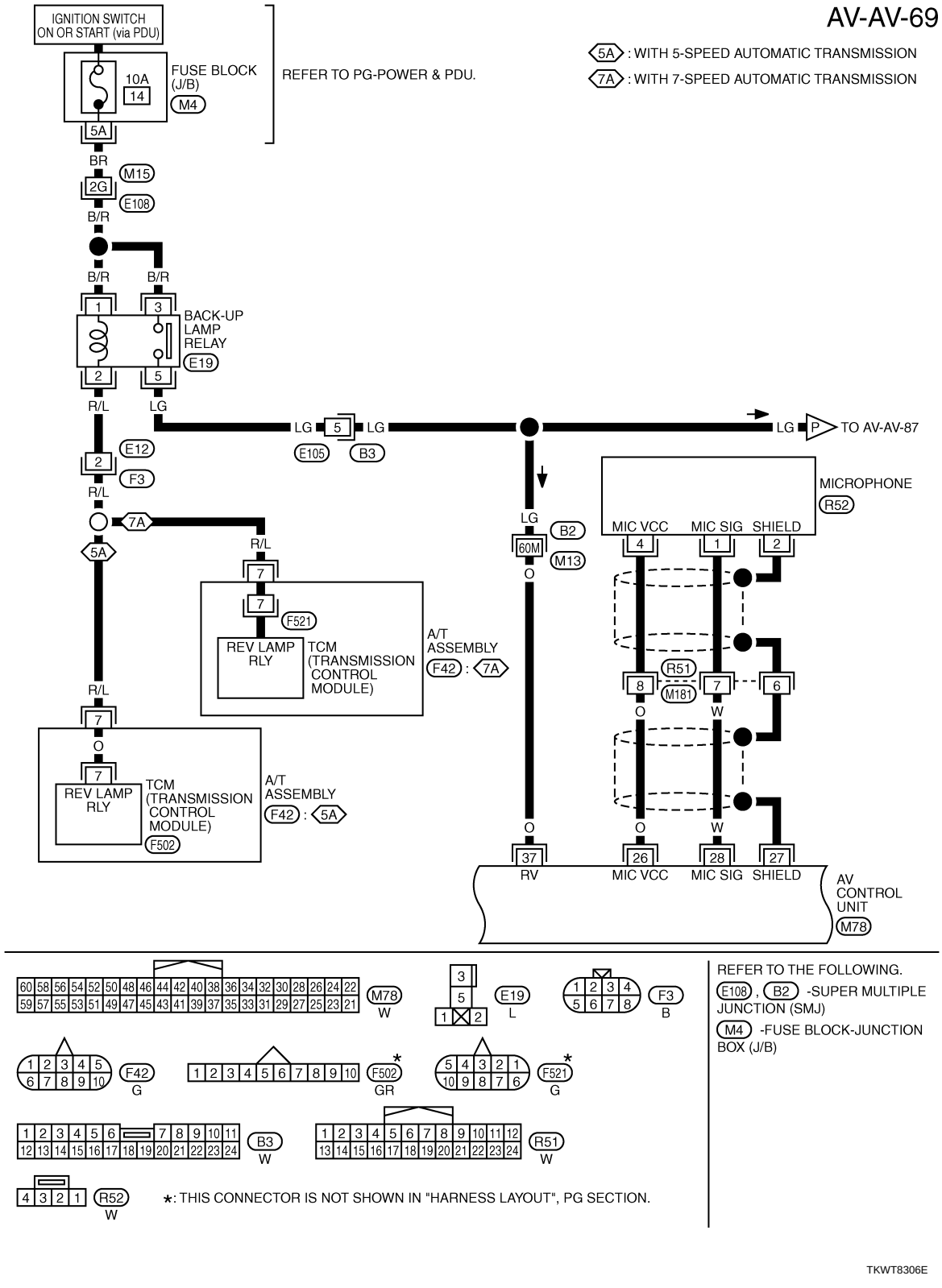
AV-AV-68



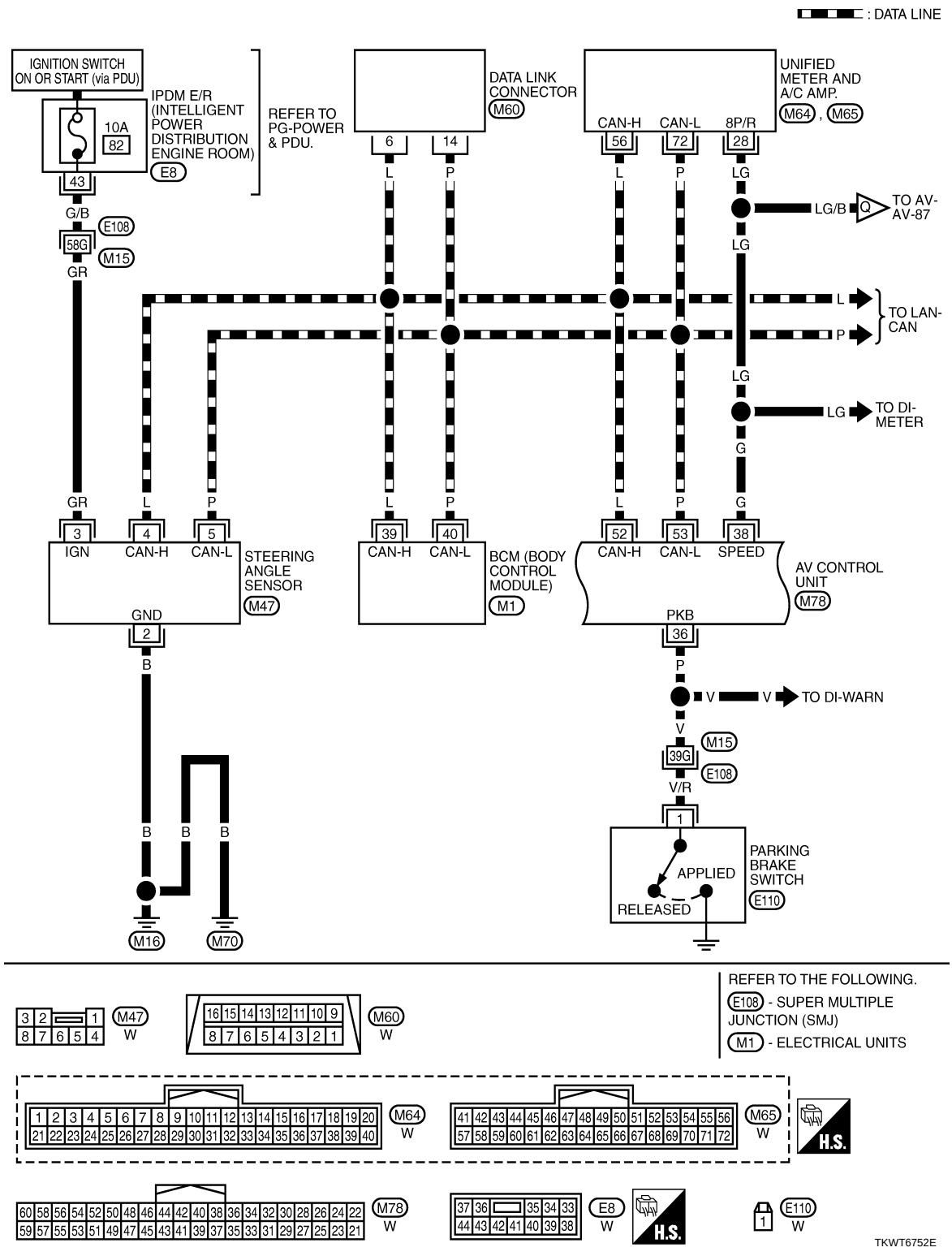


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

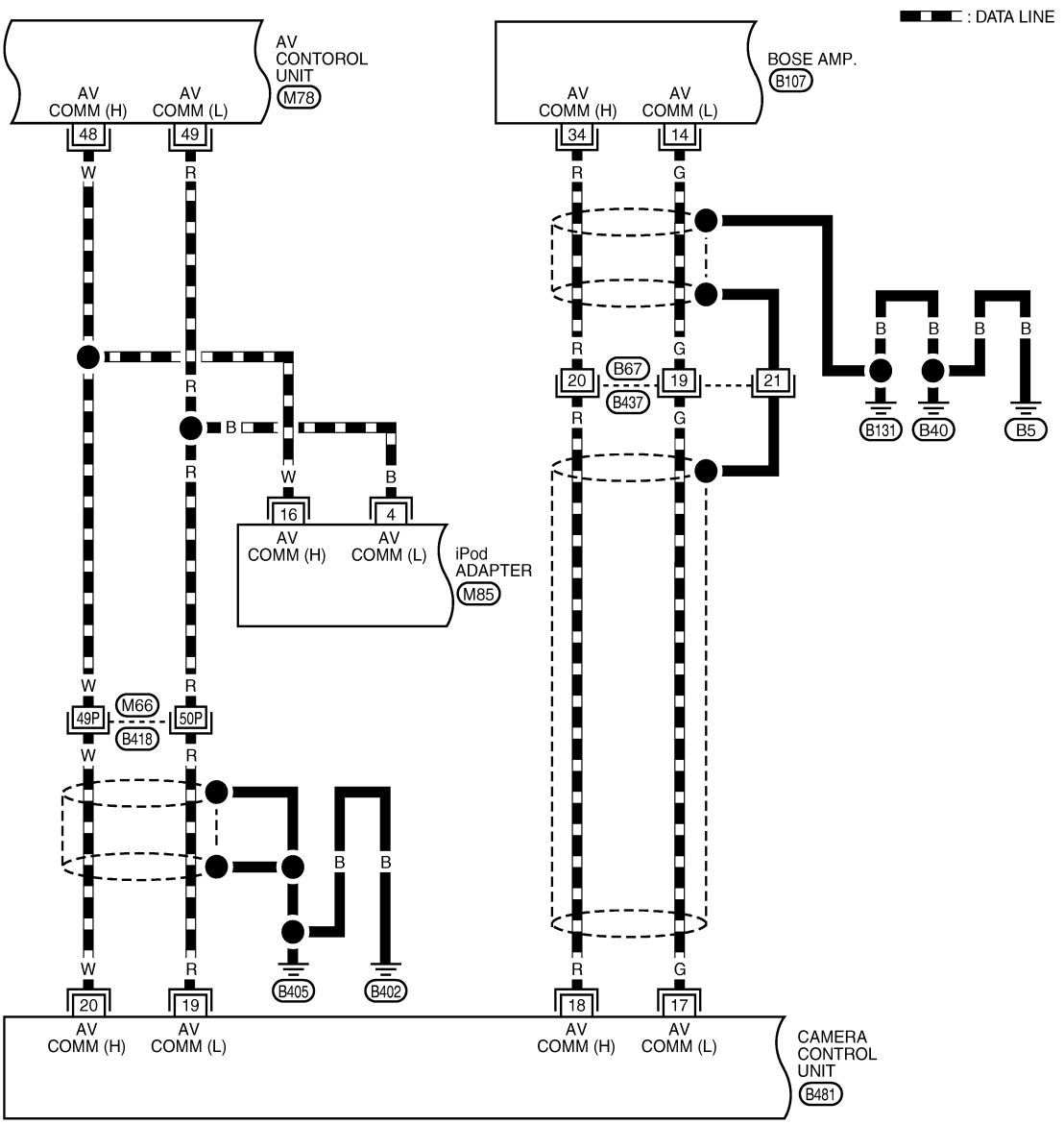
TKWT8305E

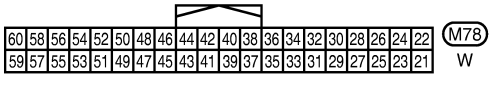

AV-AV-69
5A : WITH 5-SPEED AUTOMATIC TRANSMISSION
7A : WITH 7-SPEED AUTOMATIC TRANSMISSION
IGNITION SWITCH ON OR START (via PDU)
FUSE BLOCK (J/B)
10A
14
M4
5A
REFER TO PG-POWER & PDU.
BR
2G
M15
E108
B/R
BACK-UP LAMP RELAY
E19
R/L
LG
E12
F3
E105
B3
TO AV-AV-87
7A
REV LAMP RLY
TCM (TRANSMISSION CONTROL MODULE)
F521
A/T ASSEMBLY
F42 : 7A
F502
F42 : 5A
B2
60M
M13
MICROPHONE
R52
MIC VCC
MIC SIG
SHIELD
R51
M181
RV
AV CONTROL UNIT
M78
M78 W
E19 L
F3 B
F42 G
F502 GR
F521 G
B3 W
R51 W
R52 W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)
TKWT8306E

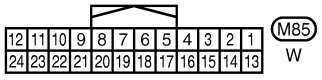
AV-AV-70

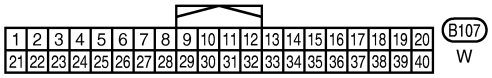

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
G/B
E108
58G
M15
GR
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56 72 28
L P LG
LG/B Q TO AV-AV-87
LG
L P TO LAN-CAN
LG LG TO DI-METER
G
GR L P L P L P G
3 4 5 39 40 52 53 38
IGN CAN-H CAN-L
STEERING ANGLE SENSOR M47
CAN-H CAN-L
BCM (BODY CONTROL MODULE) M1
CAN-H CAN-L SPEED
AV CONTROL UNIT M78
GND
2
B
PKB
36
P
V V TO DI-WARN
V
M15
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B B B
M16 M70
M47 W
M60 W
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M64 W
M65 W
H.S.
M78 W
E8 W
E110 W
TKWT6752E

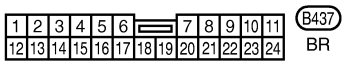
AV-AV-71

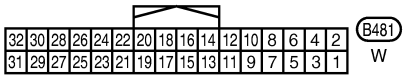








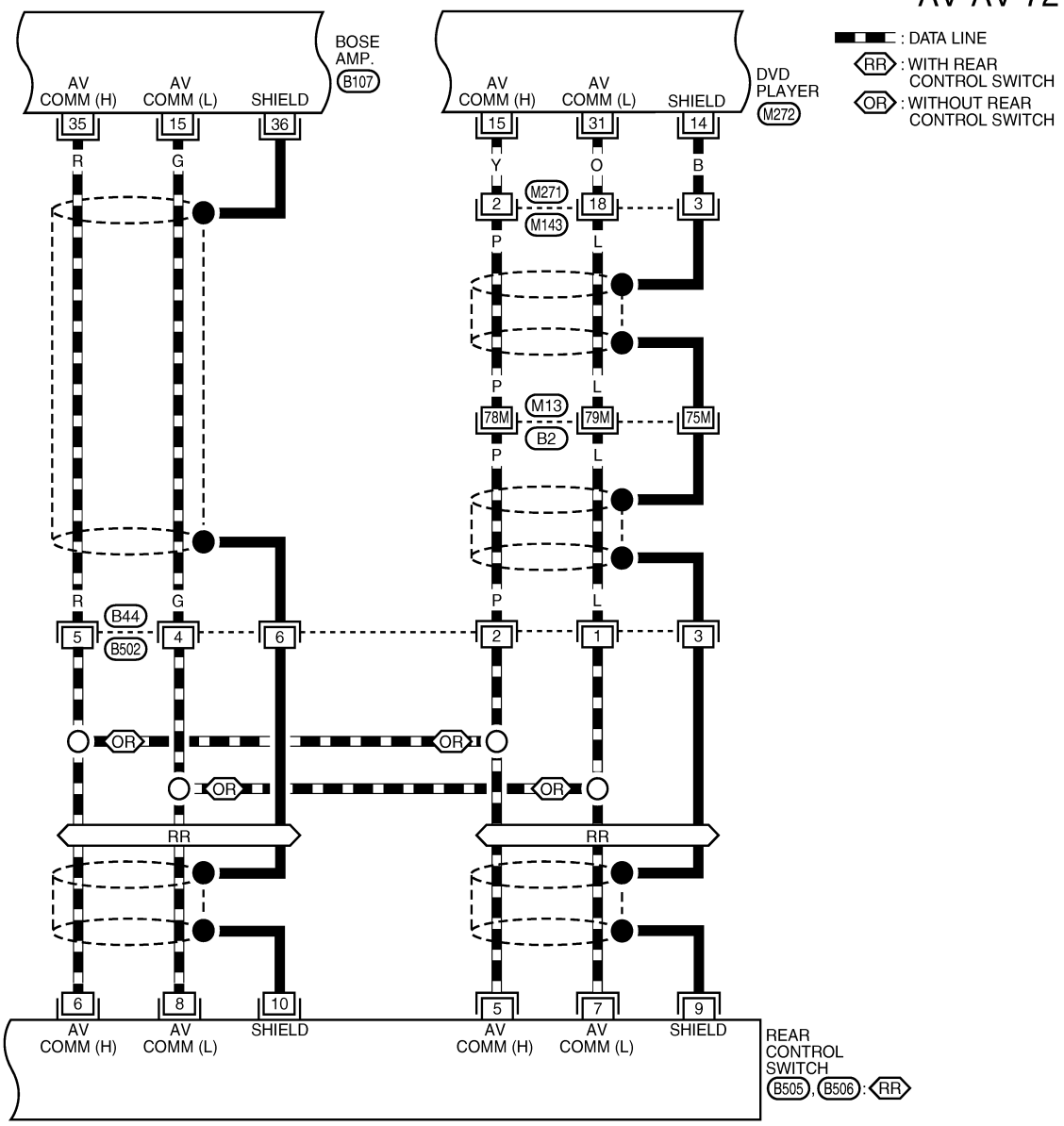


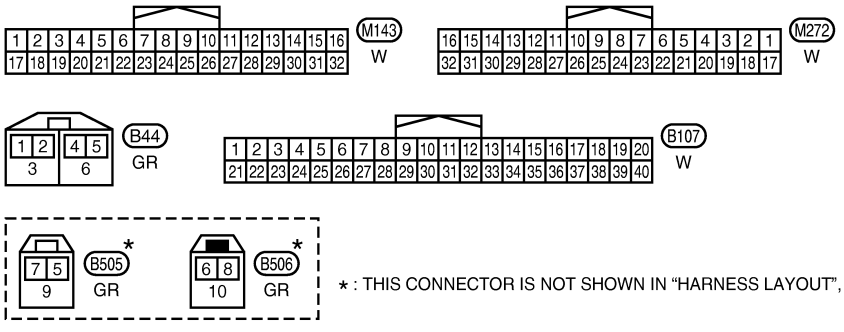


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6753E

AV-AV-72

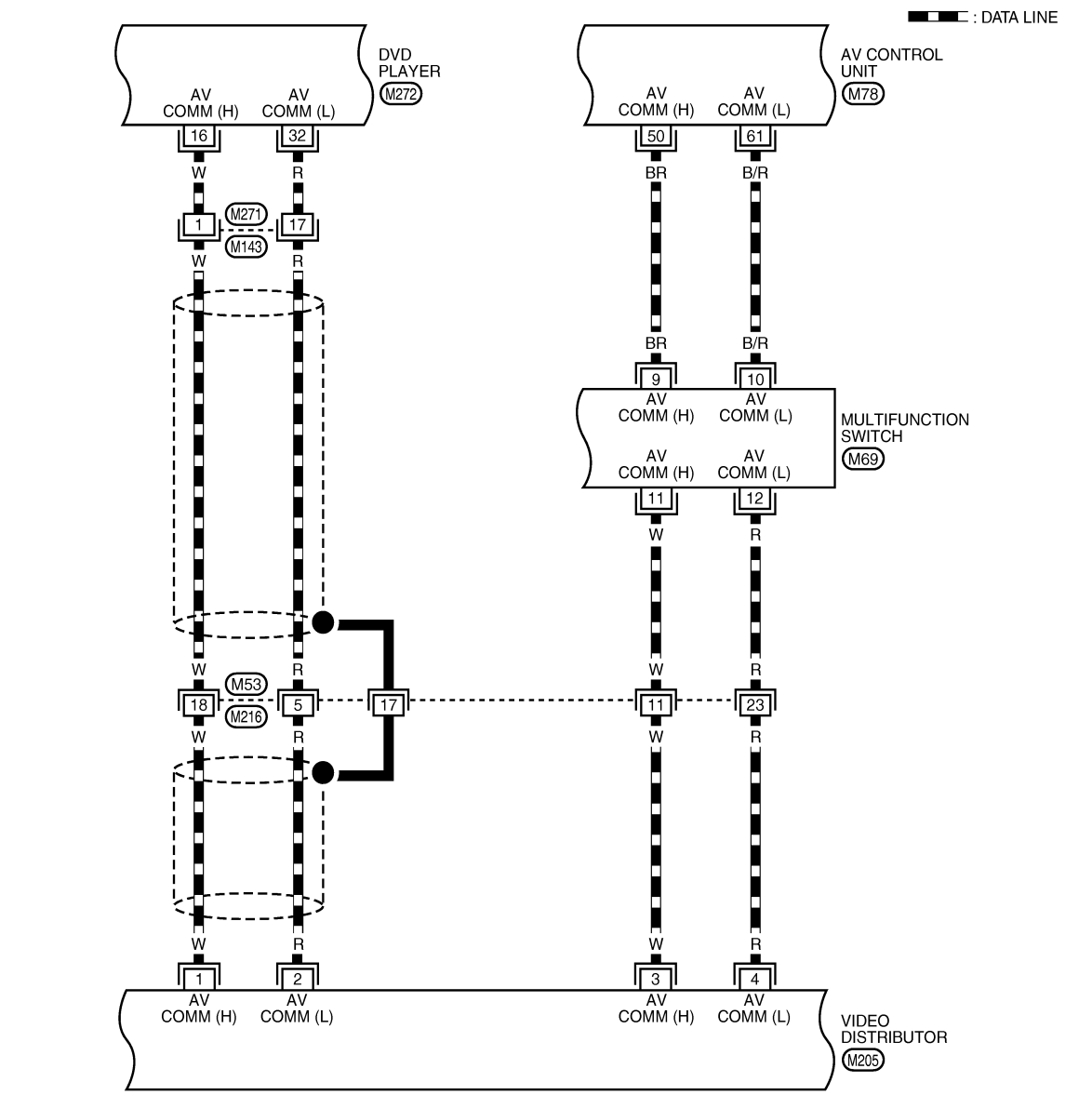


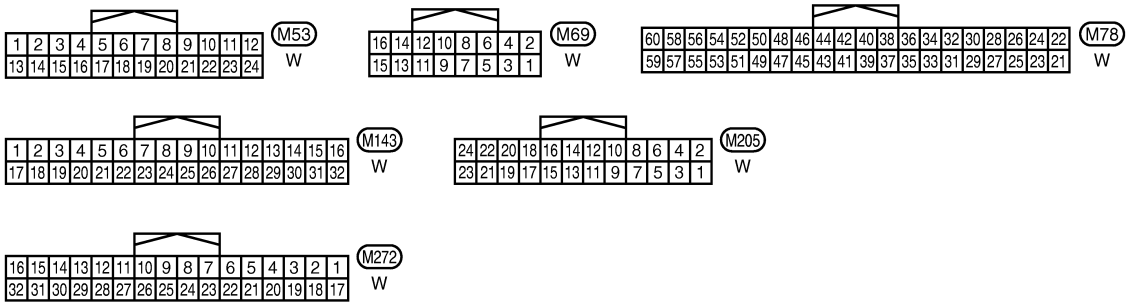


REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6754E

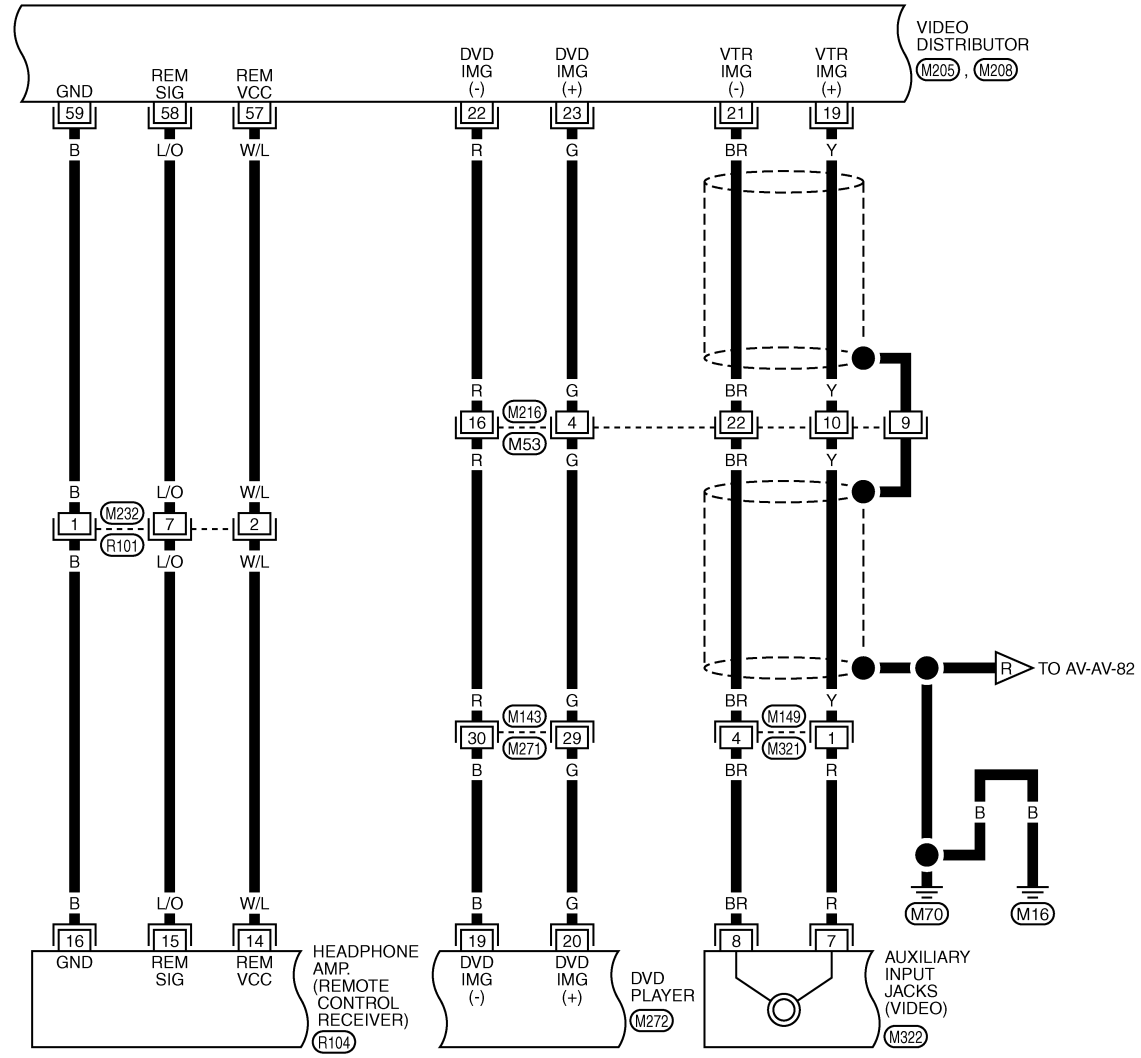
AV-AV-73





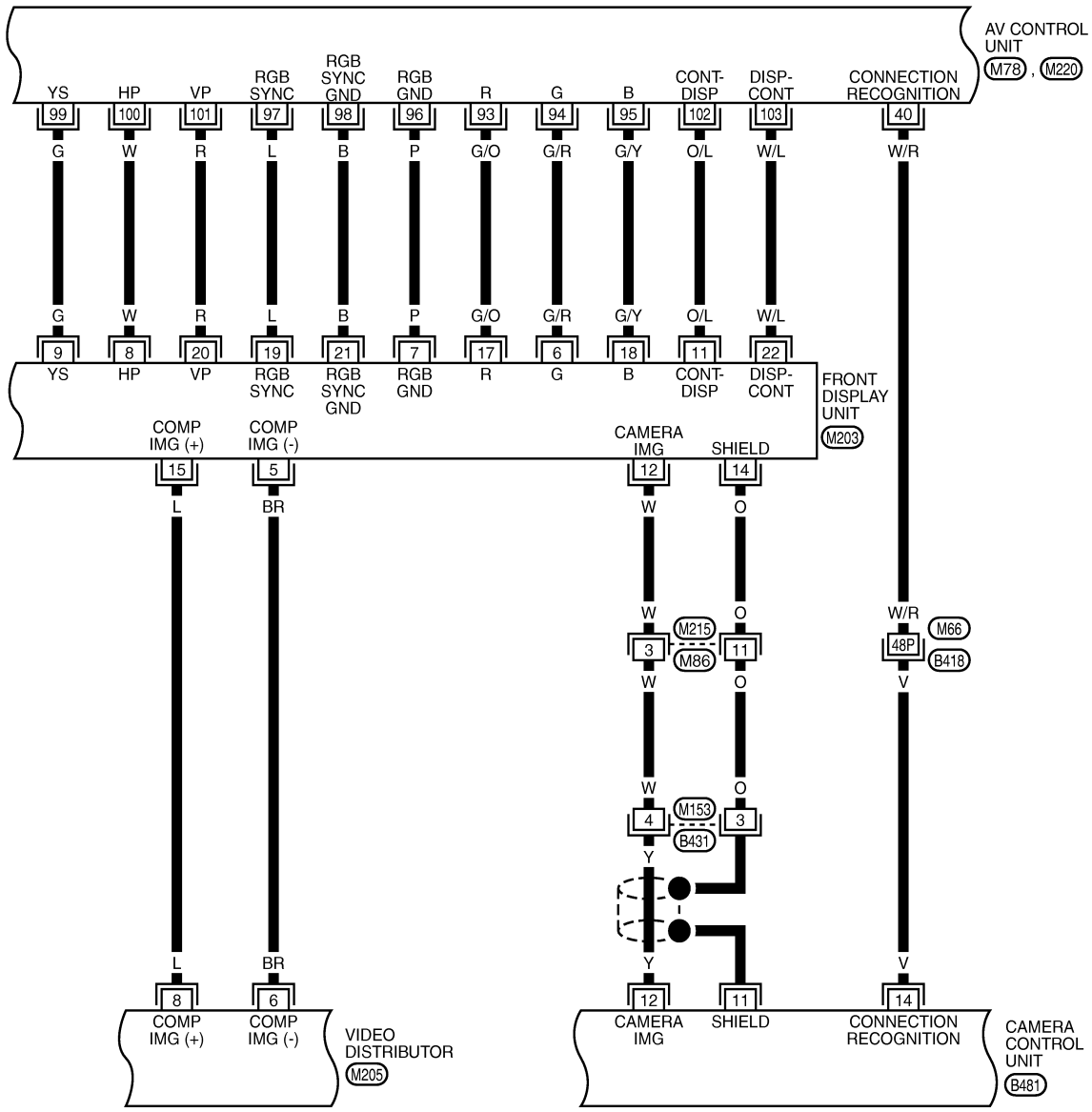
TKWT6755E

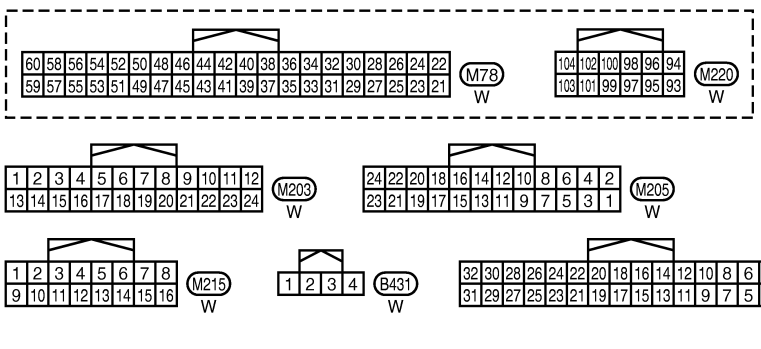
AV-AV-74



TKWT8307E

AV-AV-75

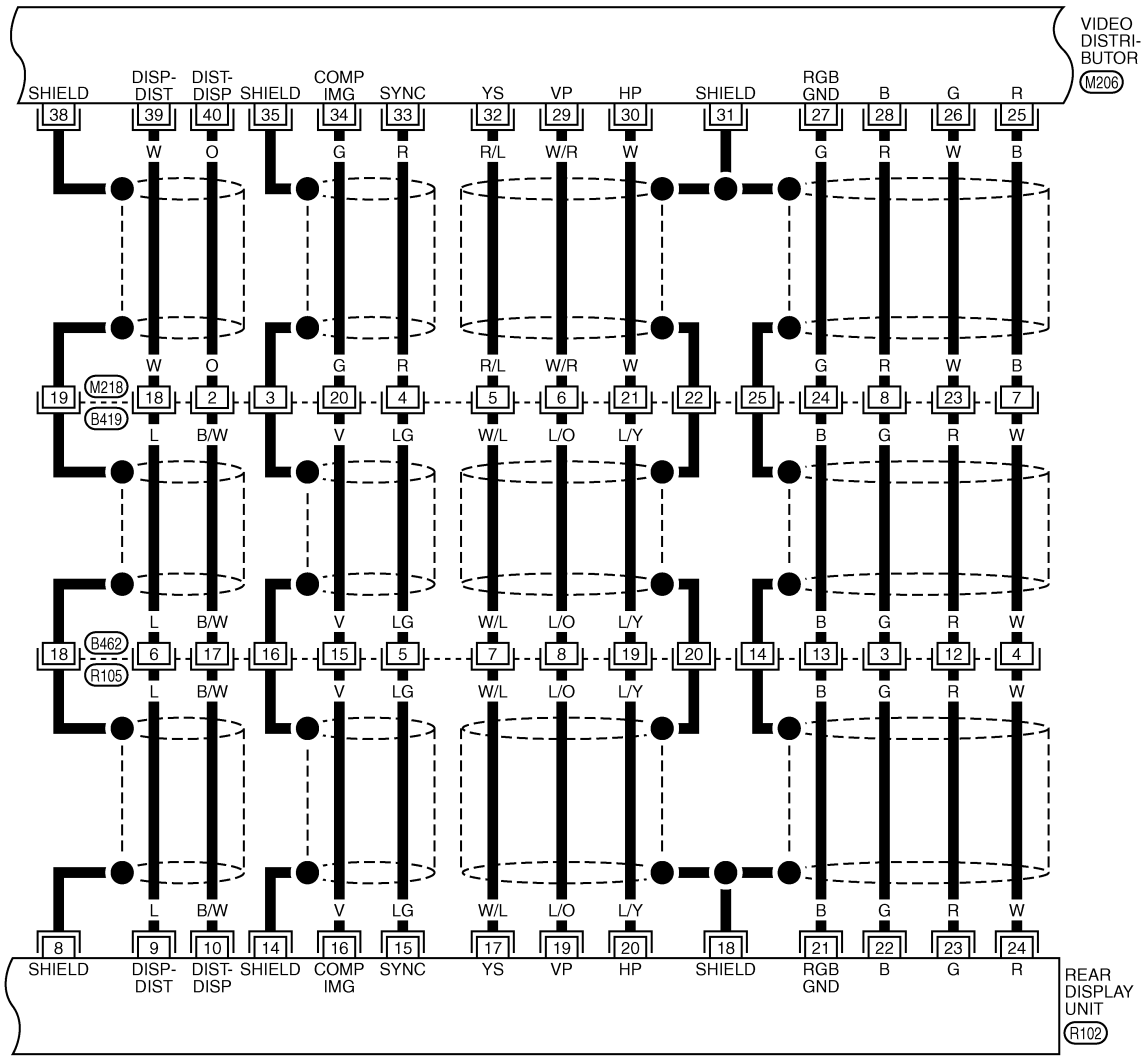


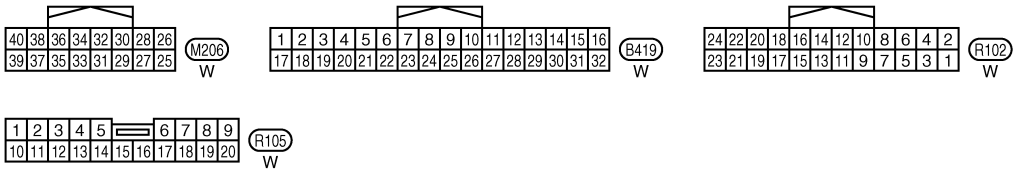


REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT6757E

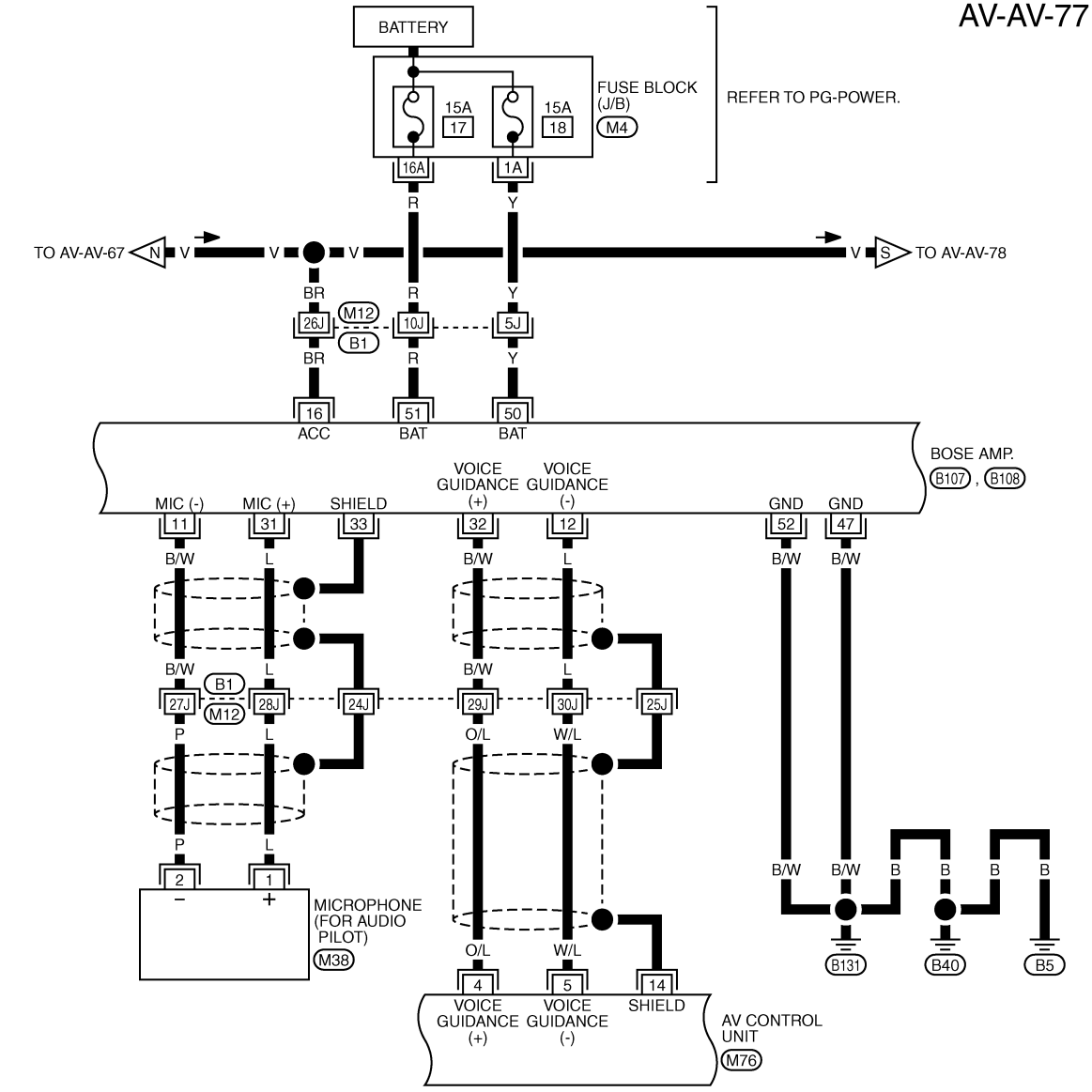
AV-AV-76

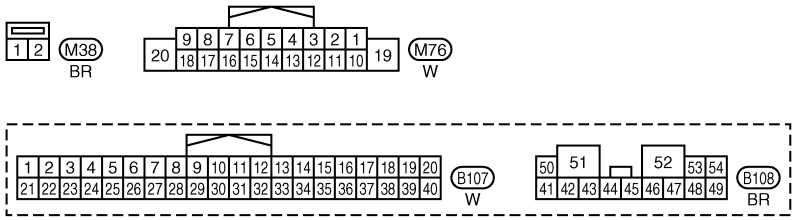




TKWT5152E

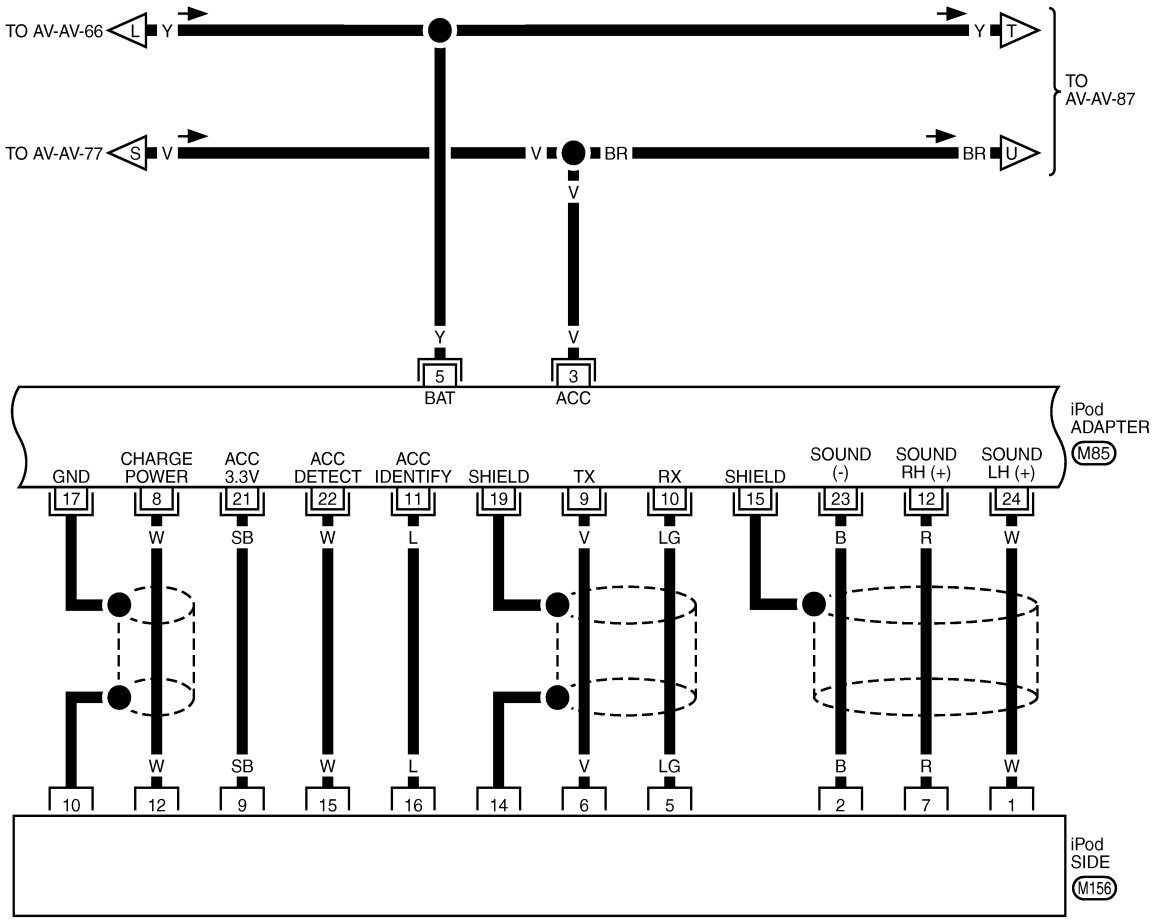
AV-AV-77

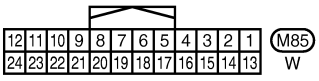


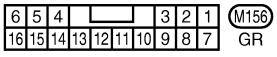


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8308E

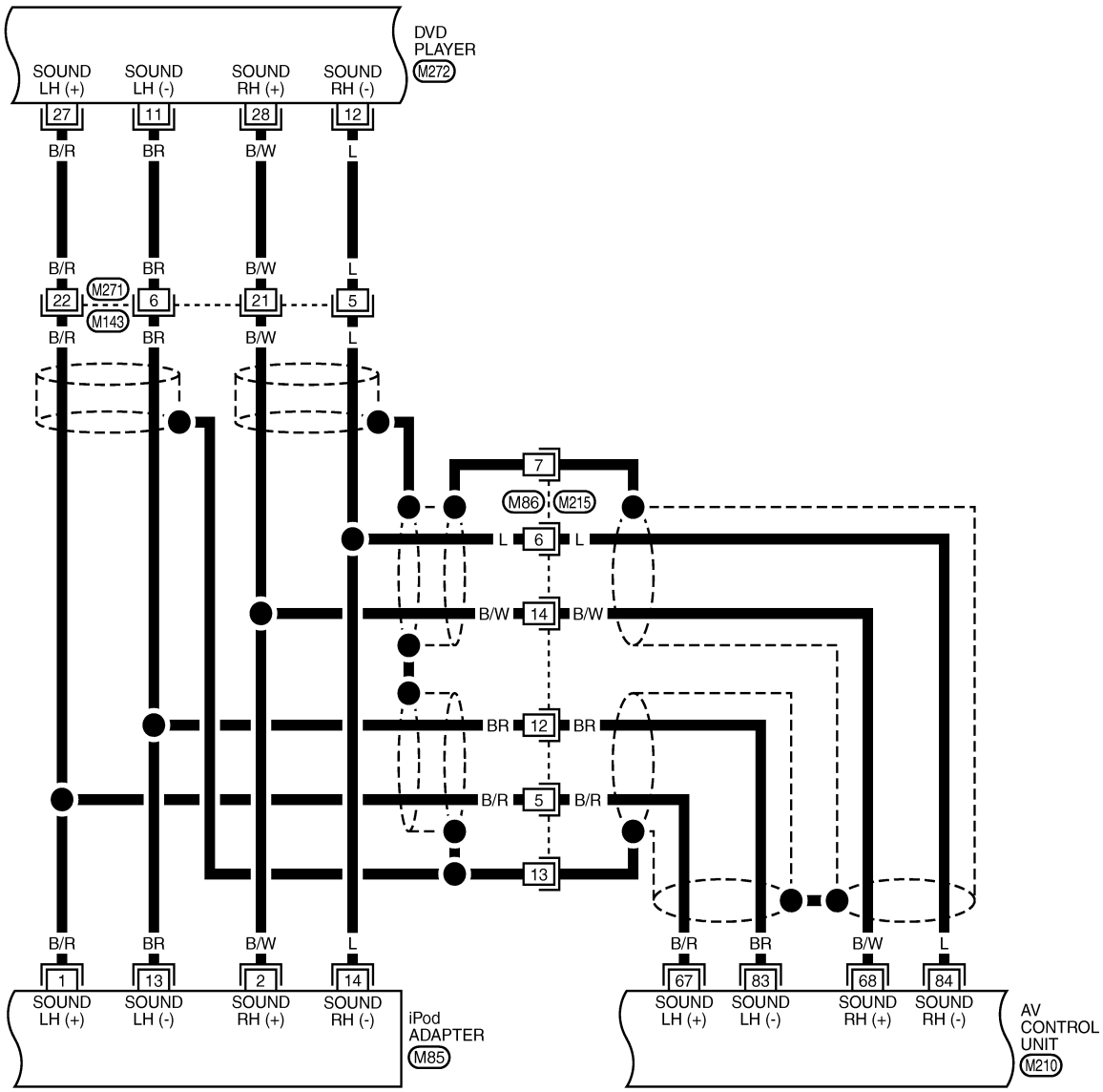

TO AV-AV-66
L
Y
Y
T
TO AV-AV-87
TO AV-AV-77
S
V
V
BR
BR
U
V
Y
V
5
BAT
3
ACC
iPod ADAPTER
M85
GND
CHARGE POWER
ACC 3.3V
ACC DETECT
ACC IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND (-)
SOUND RH (+)
SOUND LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod SIDE
M156

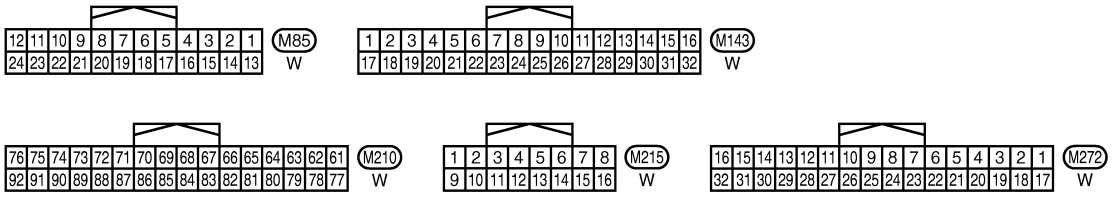

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6761E

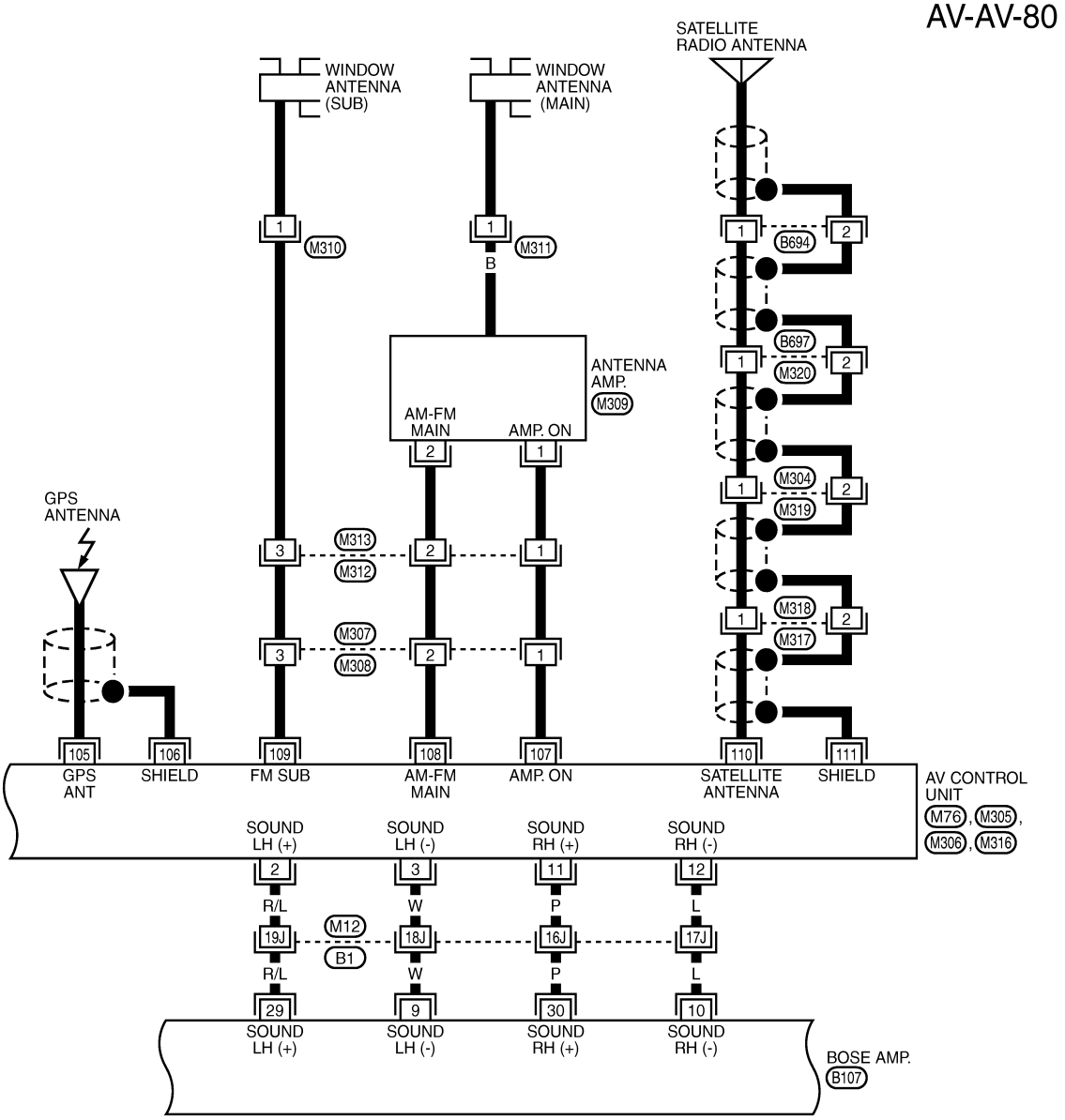
AV-AV-79

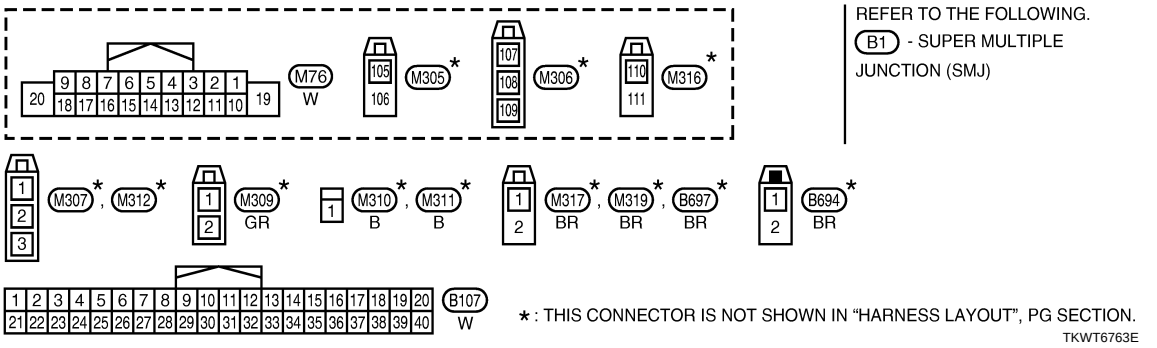




TKWT6762E

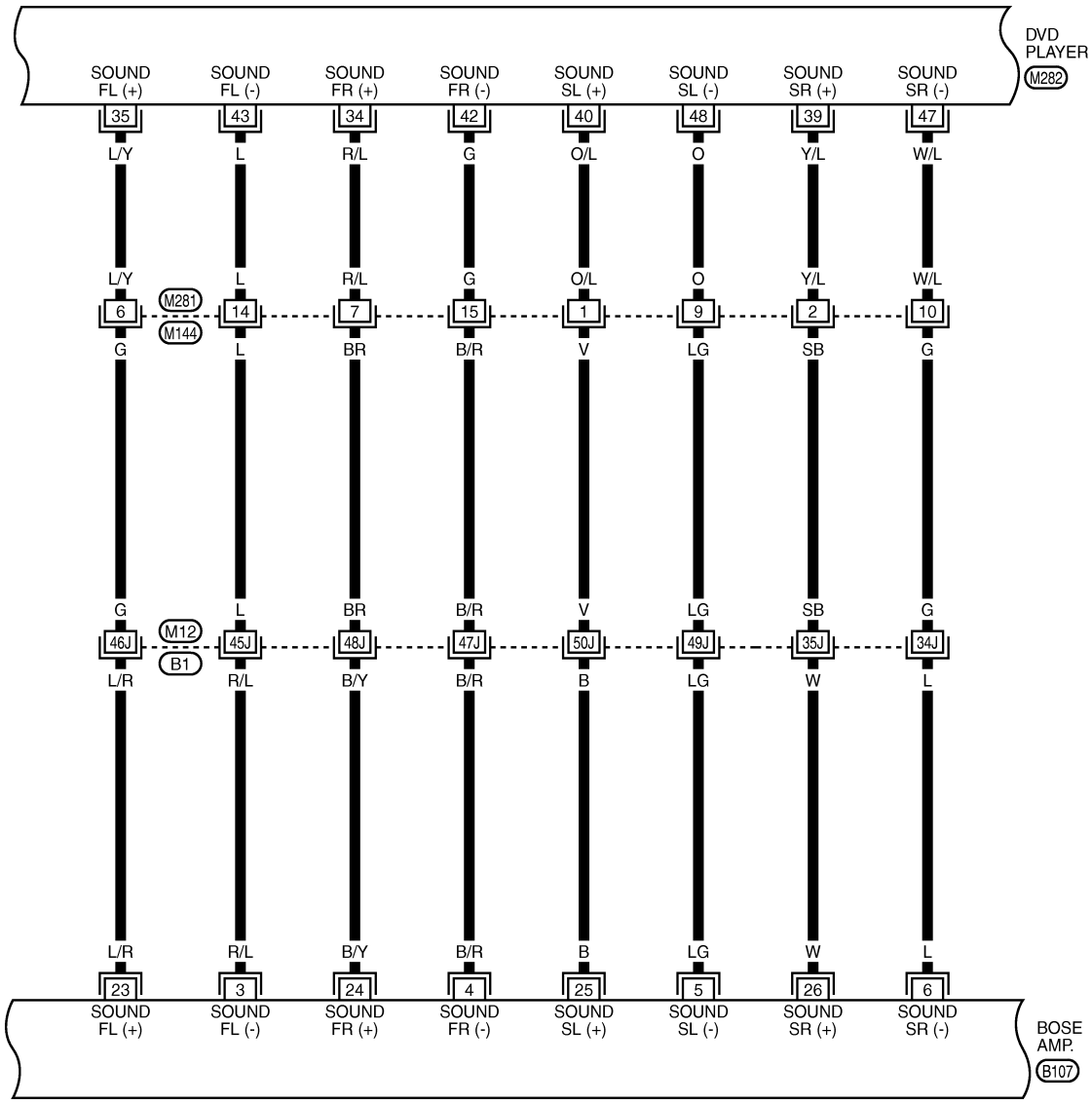
AV-AV-80

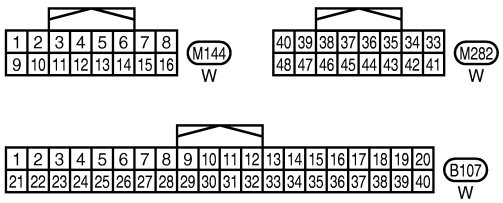




REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

AV-AV-81

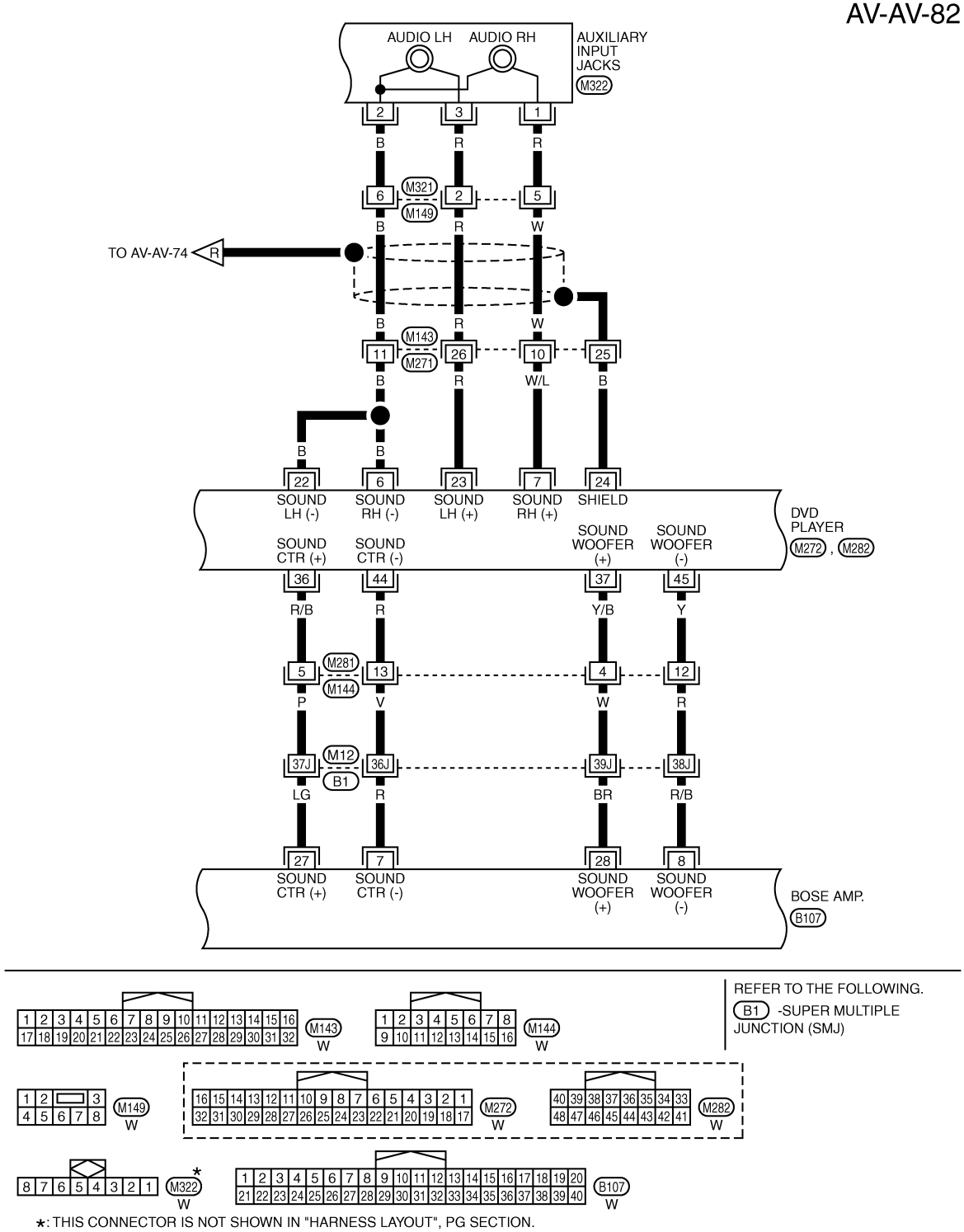




REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

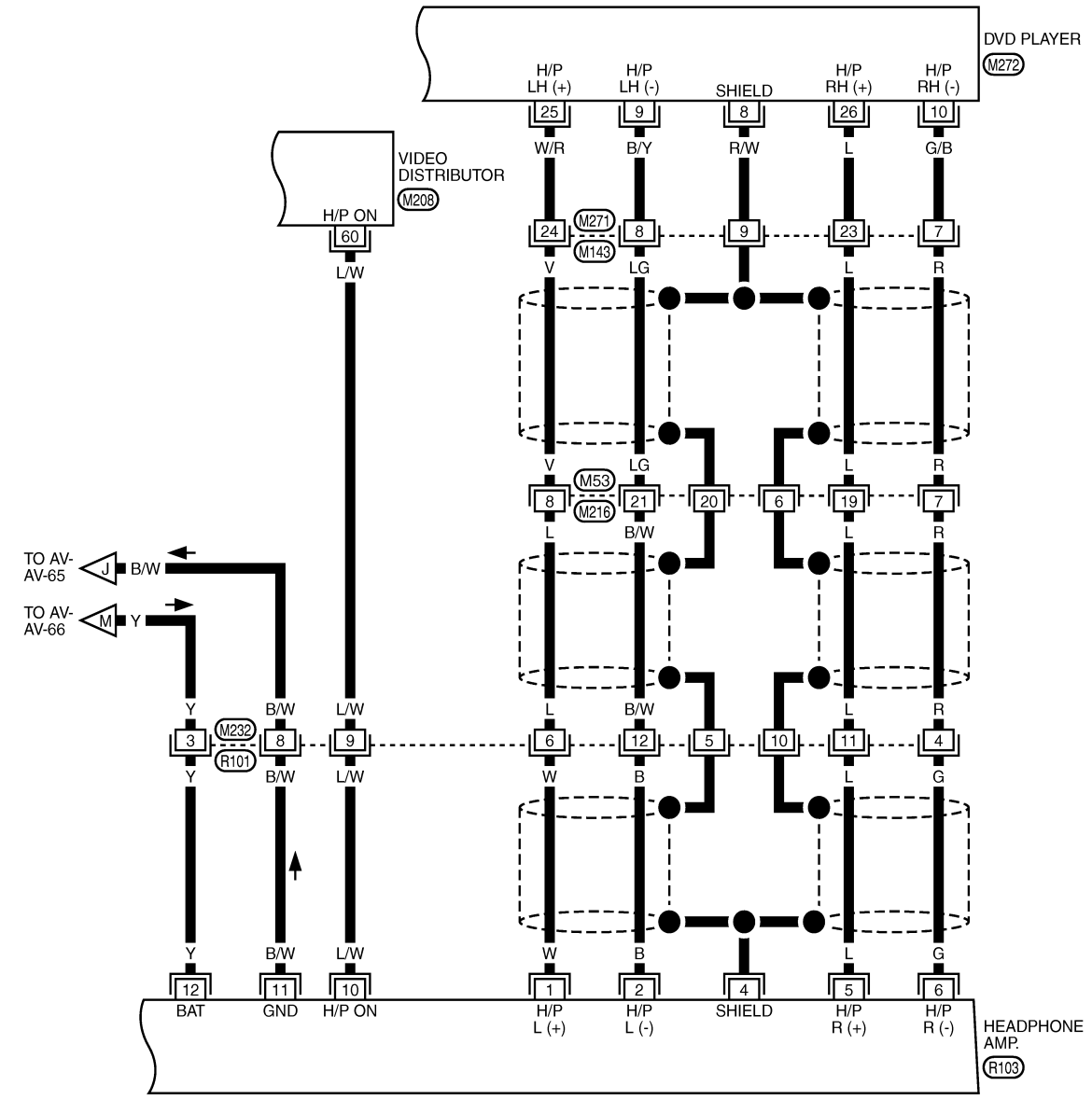
TKWT6764E

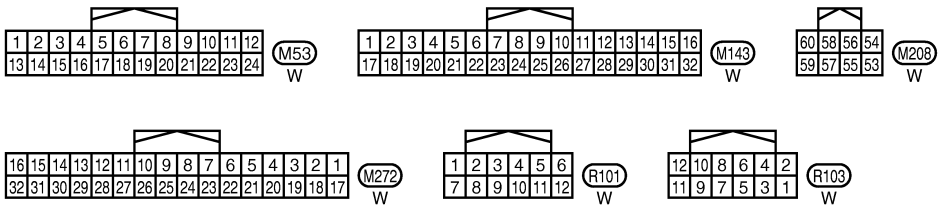
AV-AV-82



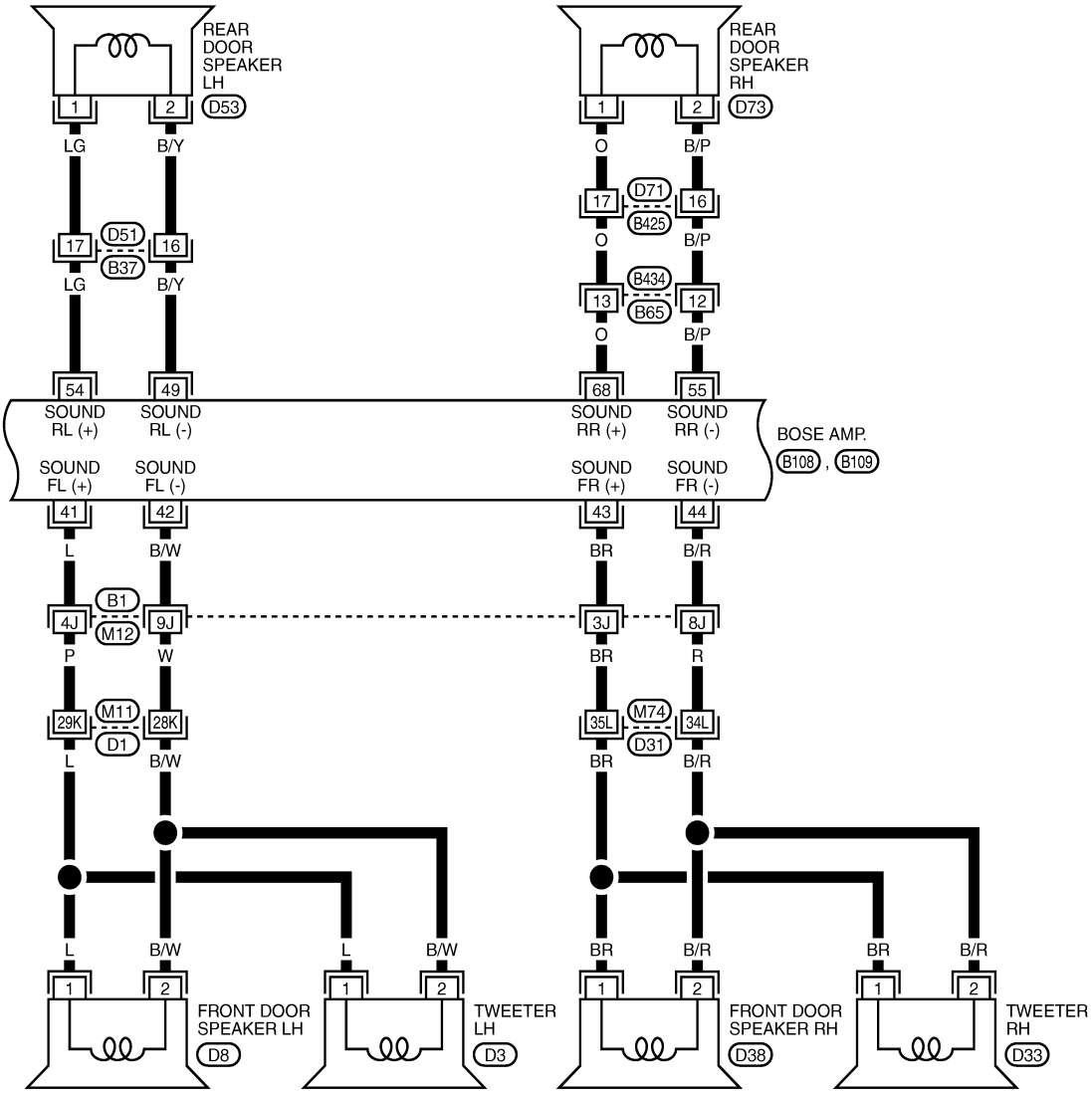
TKWT8309E

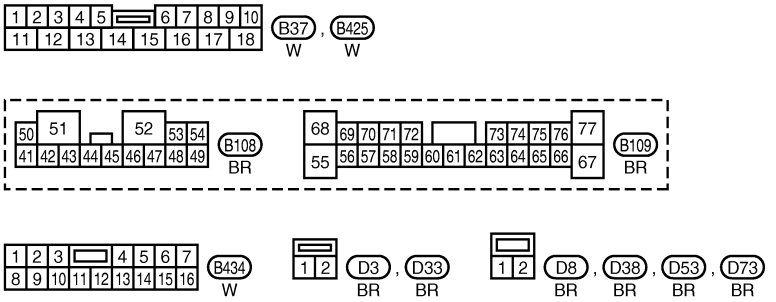
AV-AV-83





TKWT6766E

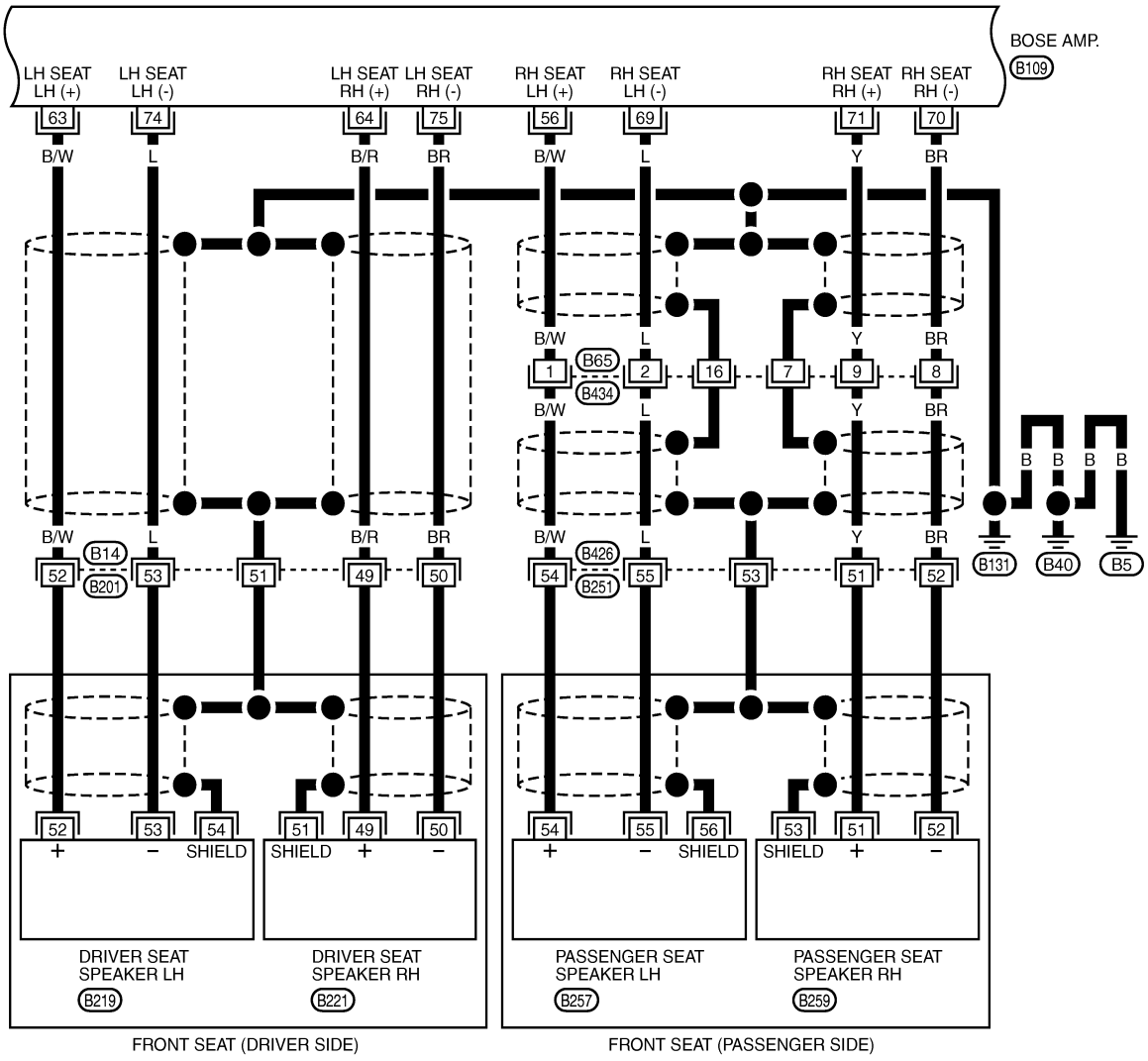


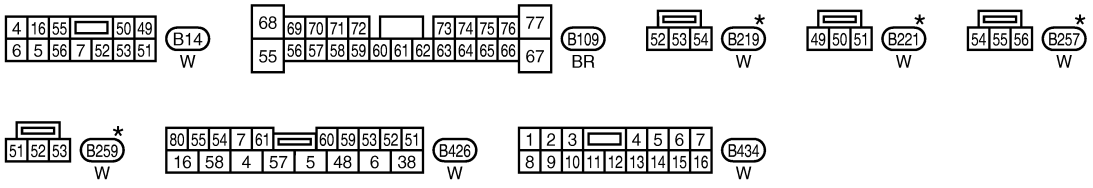


REFER TO THE FOLLOWING.
B1 , D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6767E

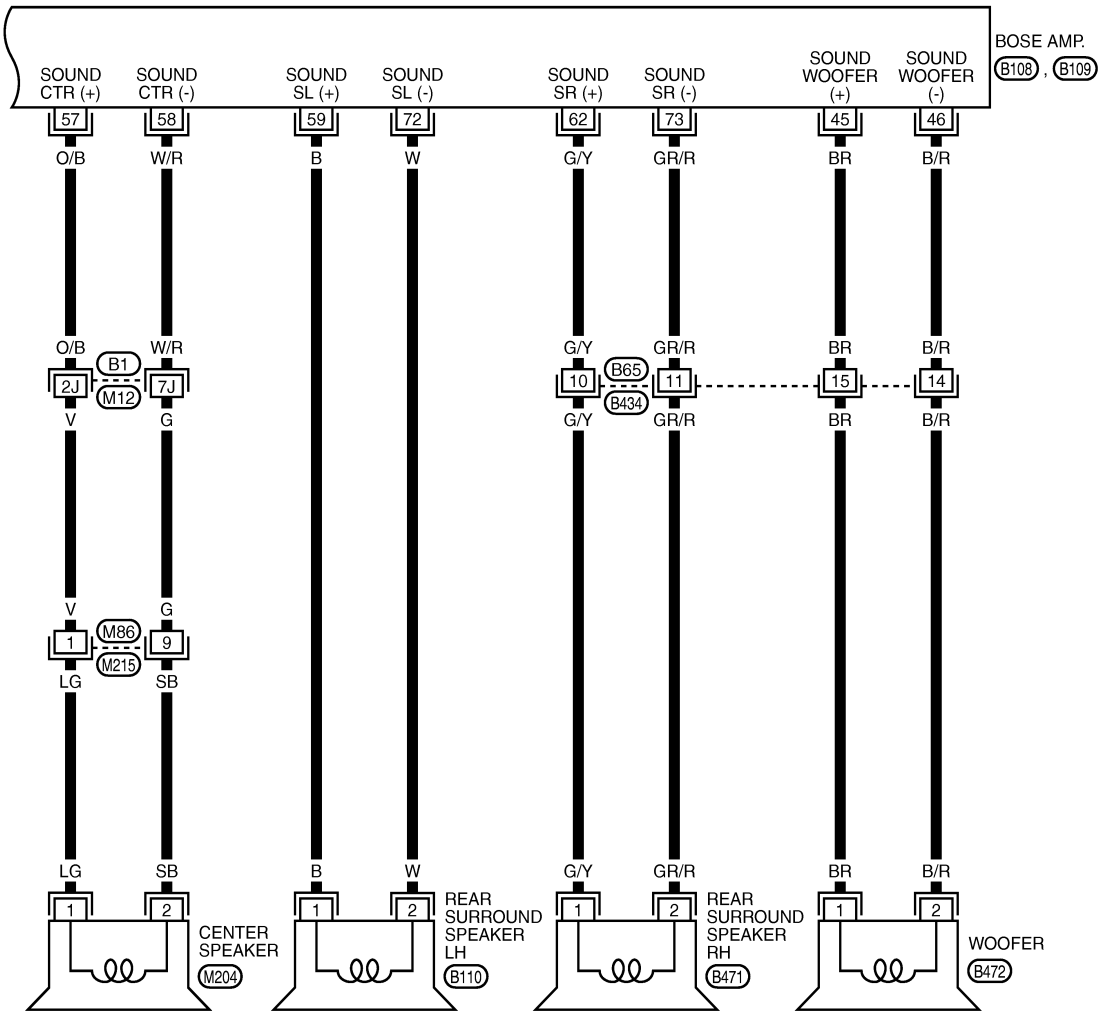
AV-AV-85

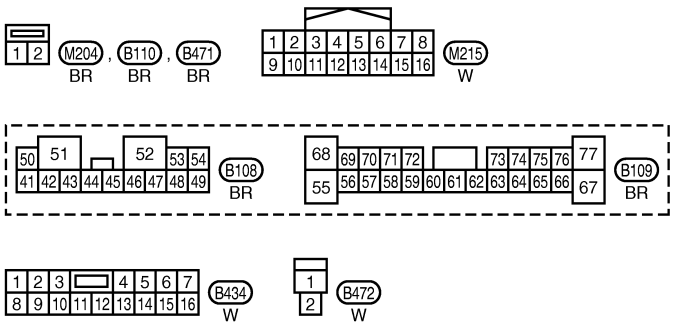




*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

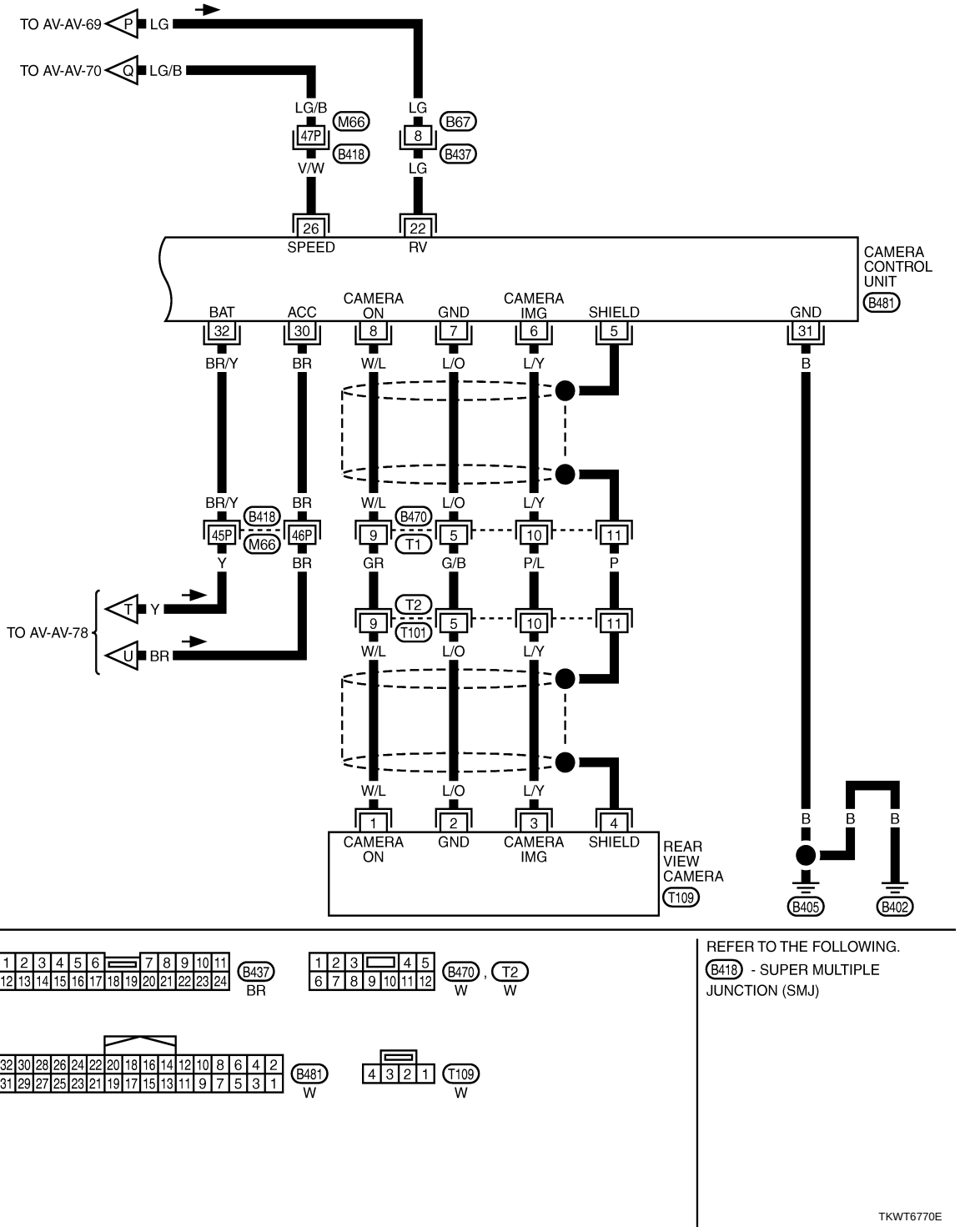
TKWT6768E





REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6769E



Fail-Safe

INFOID:0000000004156073

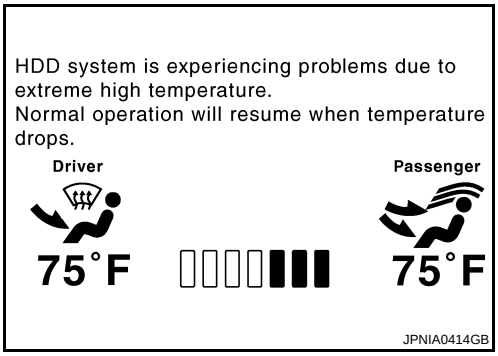
When the ambiance temperature becomes extremely low or extremely high, or when HDD is malfunctioning, AV control unit displays the message and limits the AV control unit function.

FAIL-SAFE CONDITIONS

- When the ambiance temperature is –20°C (–4°F) or lower, or when it is 70°C (158°F) or higher
- When HDD is malfunctioning

Display

The messages displayed on fail-safe conditions are as shown below:



Fail-safe mode	Display (display of the fail-safe condition)
When HDD temperature is low	HDD system is experiencing problems due to extreme low temperature. Normal operation will resume when temperature rises.
When HDD temperature is high	HDD system is experiencing problems due to extreme high temperature. Normal operation will resume when temperature drops.
When HDD is malfunctioning	HDD system is not functioning. Please contact your dealer for assistance.

DESCRIPTION OF CONTROLS

Function		When Fail-safe Function is activated
Air conditioner	Operation	Only multifunction switch (preset switch) can be operated.
	Display	• LED of multifunction switch (preset switch) illuminates. • Aimed temperature, blow angle, and flow rate are displayed in simplified mode.
Audio	Operation	Only ON/OFF and volume control operations by multifunction switch (preset switch) are possible.
	Display	No display (“Fail-safe mode” is displayed)
Camera	Operation	Image tone cannot be controlled.
	Display	Cannot be superimposed. (warning display, tone control display)
Hands-free phone	Operation	Cannot be operated.
Navigation	Operation	Cannot be operated.
Self diagnosis		The display in simplified mode of fail-safe condition
CONSULT-III diagnosis		Cannot be operated.

Ability Operation Mode

There is an ability operation mode for Fail-safes due to low or high ambiance temperature.
If HDD data can be read, fail-safe is shown, then normal displays are displayed only for functions which can be operated.

RELEASE CONDITIONS OF FAIL-SAFE

Fail-safe is released on following conditions and normal mode is restored.

When the temperature of HDD is low or high

If the ambient temperature becomes out of fail-safe condition range, normal mode is restored.

When HDD is malfunctioning

If the malfunction disappears, normal mode is restored.

NOTE:

- If fail-safe mode due to HDD malfunction is seen continuously, replace AV control unit.
- If fail-safe mode due to HDD malfunction is seen temporarily, check the “Error History” of Confirmation/ Adjustment mode. If this is normal, then continue the normal operation, observing the function. (It might be a temporary malfunction of HDD.)

DTC Index

INFOID:0000000004156074

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	AV-565, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [1010]	AV-566, "Diagnosis Procedure"
U1310	CONTROL UNIT (AV) [U1310]	AV-567, "DTC Logic"
U1200	Control Unit FLASH-ROM [1200]	AV-568, "DTC Logic"
U1201	Gyro NO CONN [1201]	AV-569, "DTC Logic"
U1216	CAN CONT [U1216]	AV-570, "DTC Logic"
U1217	BLUETOOTH CONN [U1217]	AV-571, "DTC Logic"
U1218	HDD CONN [U1218]	AV-572, "DTC Logic"
U1219	HDD READ [U1219]	AV-573, "DTC Logic"
U1220	XM SERIAL COMM [U1220]	AV-574, "DTC Logic"
U121A	HDD WRITE [U121A]	AV-575, "DTC Logic"
U121B	HDD COMM [U121B]	AV-576, "DTC Logic"
U121C	HDD ACCESS [U121C]	AV-577, "DTC Logic"
U121D	DSP CONN [U121D]	AV-578, "DTC Logic"
U121E	DSP COMM [U121E]	AV-579, "DTC Logic"
U121F	INTERNAL COMM [U121F]	AV-580, "DTC Logic"
U1204	GPS COMM [U1204]	AV-581, "DTC Logic"
U1205	GPS ROM [U1205]	AV-582, "DTC Logic"
U1206	GPS RAM [U1206]	AV-583, "DTC Logic"
U1207	GPS RTC [U1207]	AV-584, "DTC Logic"
U1243	FRONT DISP CONN [U1243]	AV-585, "DTC Logic"
U1247	REAR DISP CONN [U1247]	AV-588, "DTC Logic"
U1244	GPS ANTENNA CONN [U1244]	AV-587, "DTC Logic"
U1250	CAMERA CONT. CONN [U1250]	AV-590, "DTC Logic"
U1258	XM ANTENNA CONN [U1258]	AV-591, "DTC Logic"
U1300	AV COMM CIRCUIT [U1300]	AV-592, "Description"
U1300 U121F	• AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F]	AV-592, "Description"
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	AV-592, "Description"
U1300 U1246	• AV COMM CIRCUIT [U1300] • VIDEO DIST CONN [U1246]	AV-592, "Description"
U1300 U1248	• AV COMM CIRCUIT [U1300] • DVD DECK CONN [U1248]	AV-592, "Description"
U1300 U124E	• AV COMM CIRCUIT [U1300] • AMP CONN [U124E]	AV-592, "Description"
U1300 U1252	• AV COMM CIRCUIT [U1300] • REAR CAMERA LAN CONN [U1252]	AV-592, "Description"
U1300 U1254	• AV COMM CIRCUIT [U1300] • IPOD CONN [U1254]	AV-592, "Description"
U1300 U1252 U1254	• AV COMM CIRCUIT [U1300] • REAR CAMERA LAN CONN [U1252] • IPOD CONN [U1254]	AV-592, "Description"

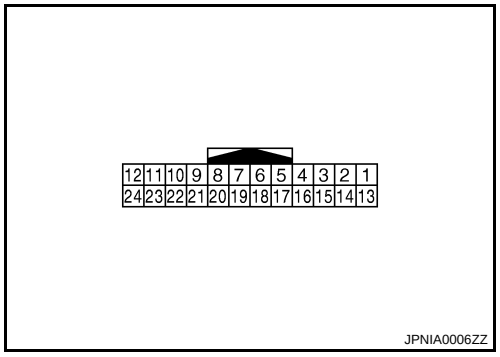
DTC	Display item	Refer to
U1300 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPOD CONN [U1254]	AV-592, "Description"
U1300 U1248 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPOD CONN [U1254]	AV-592, "Description"
U1300 U1246 U1248 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • VIDEO DIST CONN [U1246] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPOD CONN [U1254]	AV-592, "Description"
U1300 U1240 U1246 U1248 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • VIDEO DIST CONN [U1246] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPOD CONN [U1254]	AV-592, "Description"
U1300 U121F U1240 U1246 U1248 U124E U1252 U1254	• AV COMM CIRCUIT [U1300] • INTERNAL COMM [U121F] • SWITCH CONN [U1240] • VIDEO DIST CONN [U1246] • DVD DECK CONN [U1248] • AMP CONN [U124E] • REAR CAMERA LAN CONN [U1252] • IPOD CONN [U1254]	AV-592, "Description"

FRONT DISPLAY UNIT

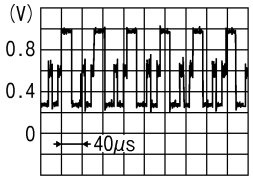
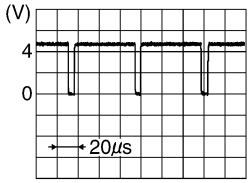
Reference Value

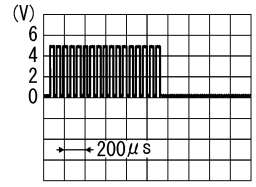
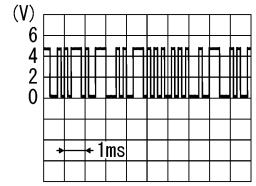
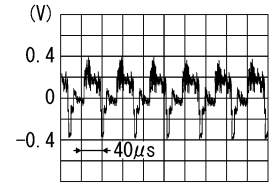
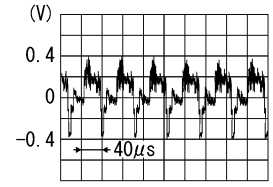
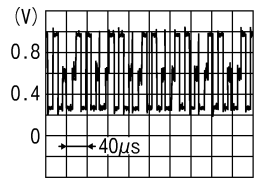
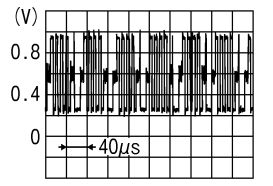
INFOID:0000000004156075

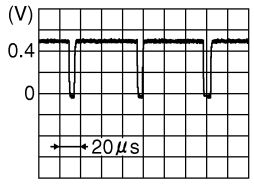
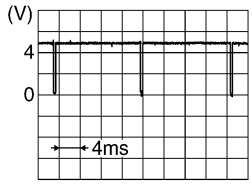
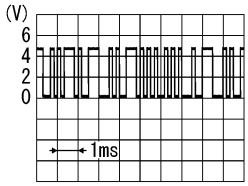
TERMINAL LAYOUT



PHYSICAL VALUES

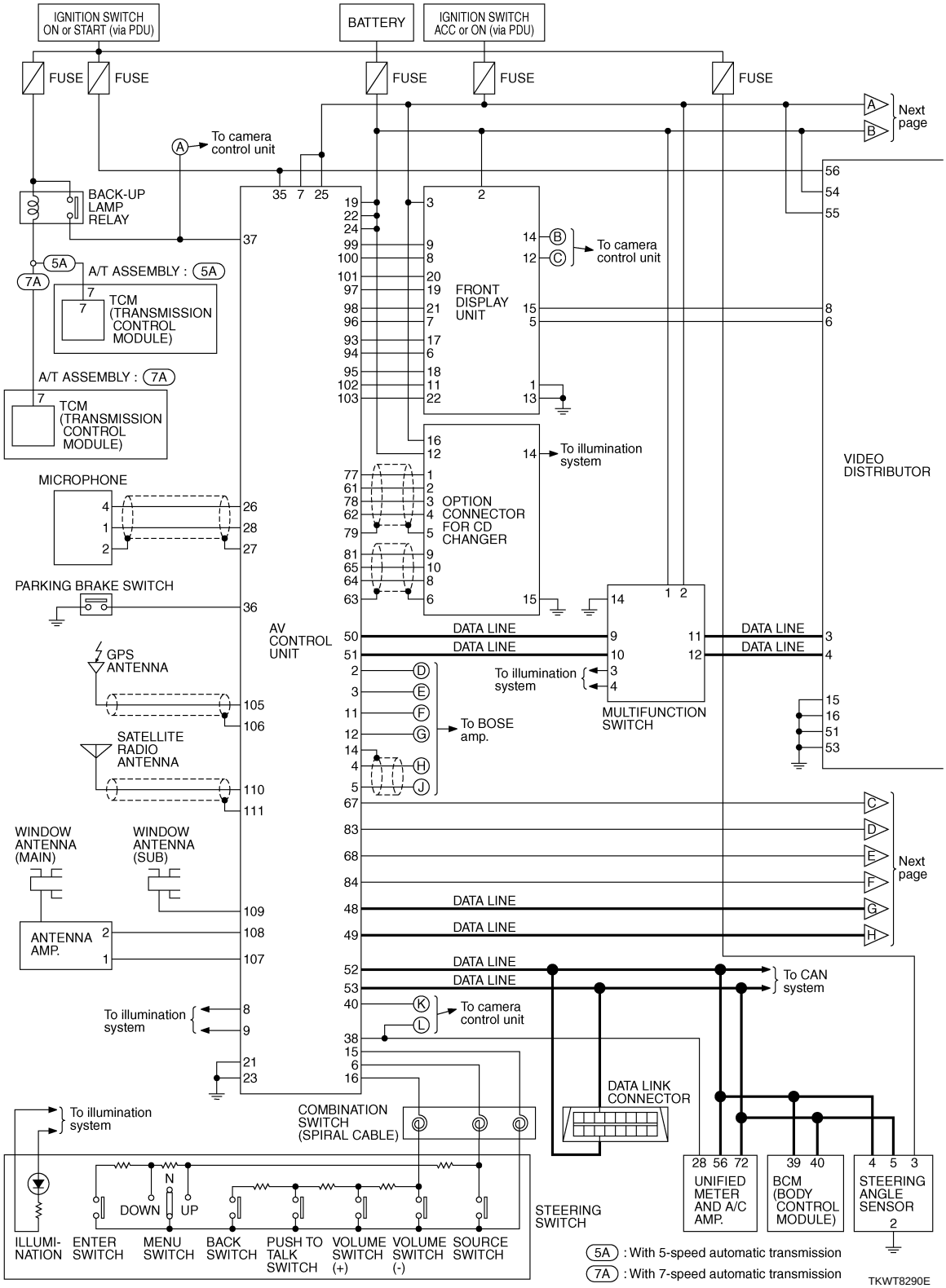
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
3 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
5 (BR)	Ground	Composite image ground	—	Ignition switch ON	—	0 V
6 (G/R)	Ground	RGB signal (G: green)	Input	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1030ZZ
7 (P)	Ground	RGB signal ground	—	Ignition switch ON	—	0 V
8 (W)	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON	—	 SKIB3601E

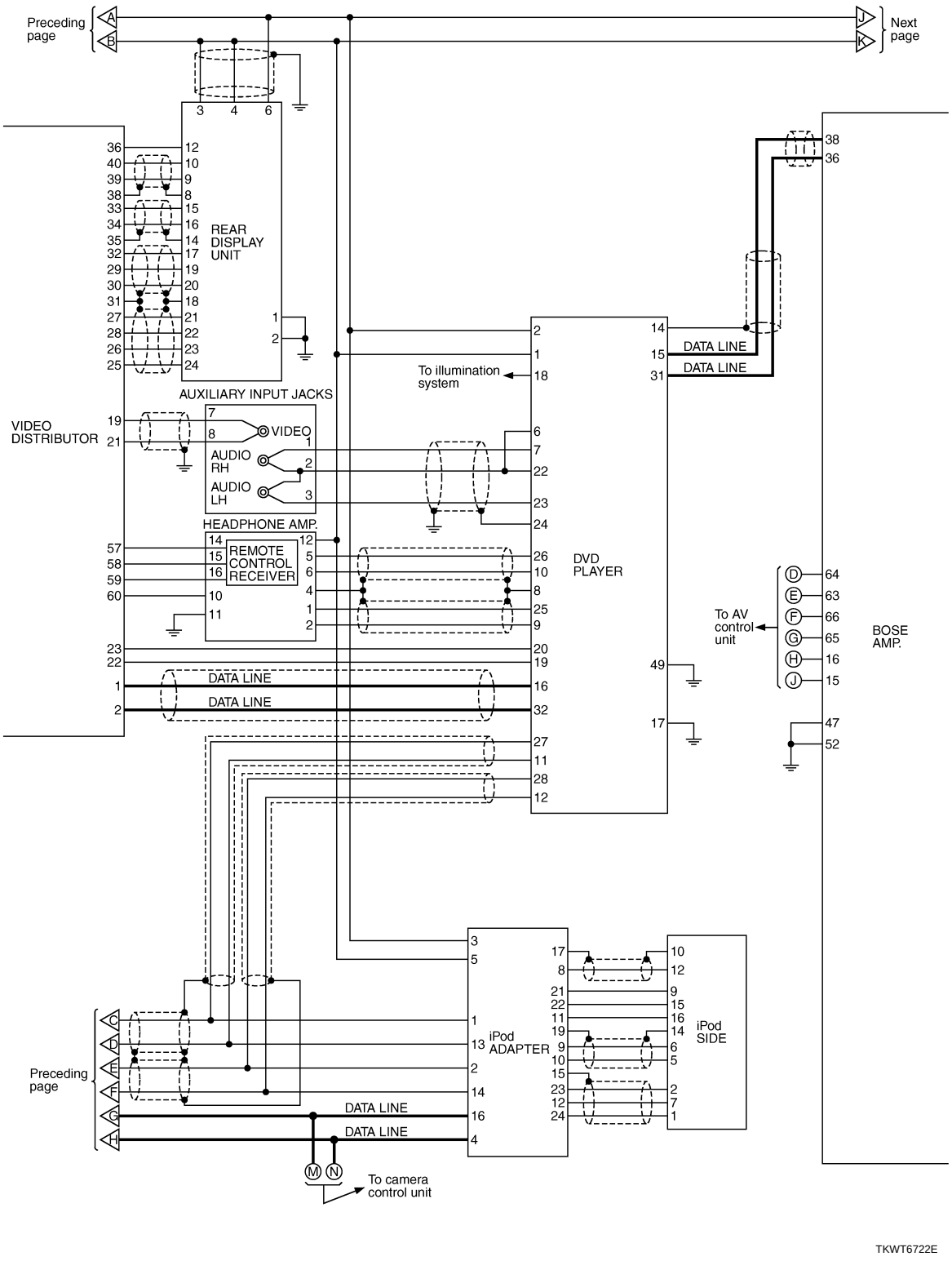
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
9 (G)	Ground	RGB area (YS) signal	Input	Ignition switch ON	When RGB image is displayed on front display.	5 V
					When rear view camera image is displayed.	 PKIB4948J
11 (O/L)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting front display brightness.	 PKIB5039J
12 (W)	Ground	Camera image signal	Input	Ignition switch ON	When rear view camera image is displayed.	 SKIB2251J
13 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
14	—	Shield	—	—	—	—
15 (L)	5 (BR)	Composite image signal (AUX and DVD images)	Input	Ignition switch ON	When AUX or DVD image is displayed on front display.	 SKIB2251J
17 (G/O)	Ground	RGB signal (R: red)	Input	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1029ZZ
18 (G/Y)	Ground	RGB signal (B: blue)	Input	Ignition switch ON	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1031ZZ

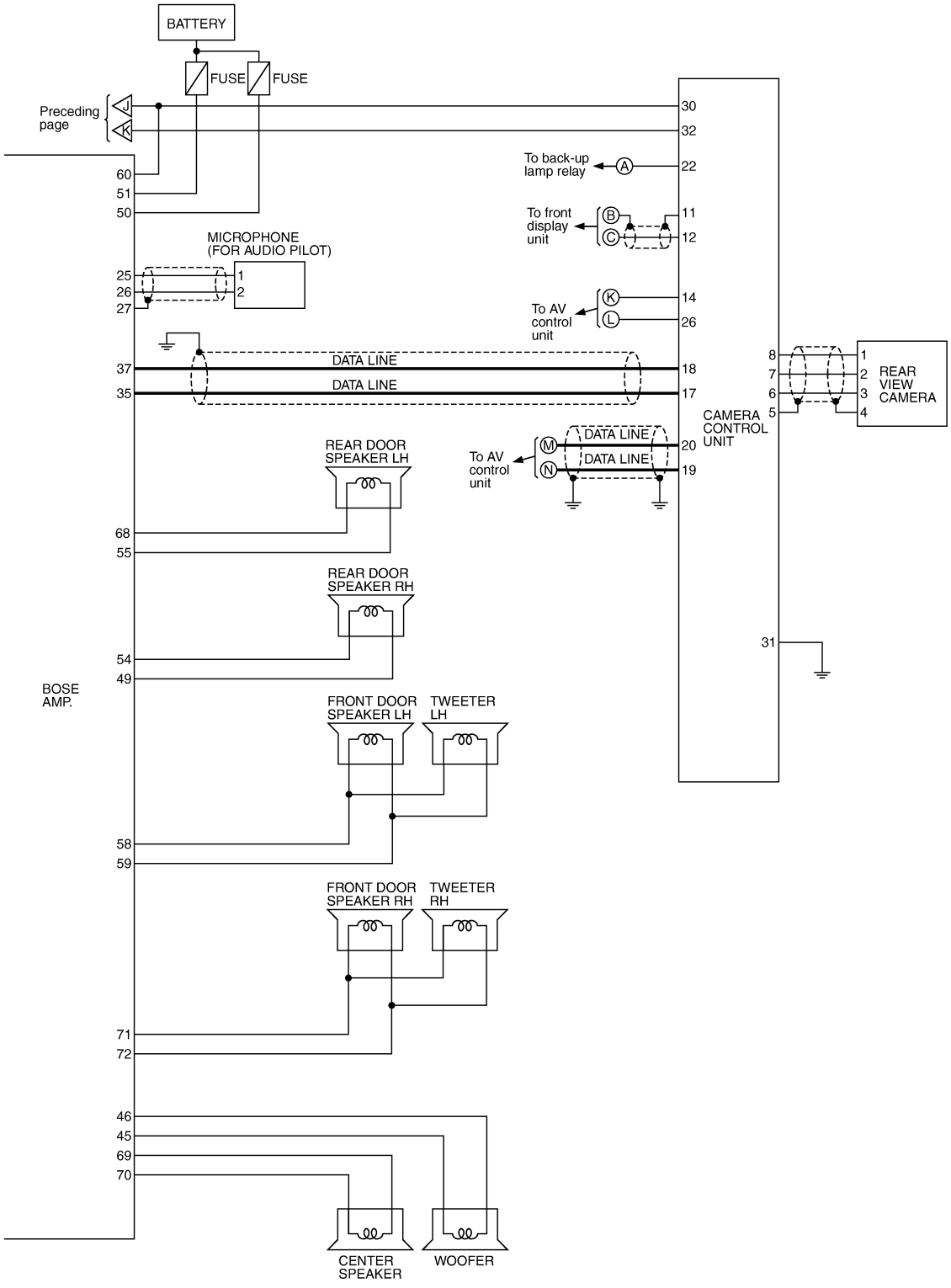
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
19 (L)	Ground	RGB synchronizing signal	Input	Ignition switch ON	—	 JPNIA0461GB
20 (R)	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch ON	—	 SKIB3598E
21 (B)	Ground	RGB synchronizing signal ground	—	Ignition switch ON	—	0 V
22 (W/L)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting front display brightness.	 PKIB5039J

Schematic - BOSE Audio 2ch System-

INFOID:0000000004391594




Preceding page
Next page
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
To illumination system
DVD PLAYER
DATA LINE
DATA LINE
DATA LINE
To AV control unit
BOSE AMP.
iPod ADAPTER
iPod SIDE
Preceding page
DATA LINE
DATA LINE
To camera control unit
TKWT6722E



TKWT6723E

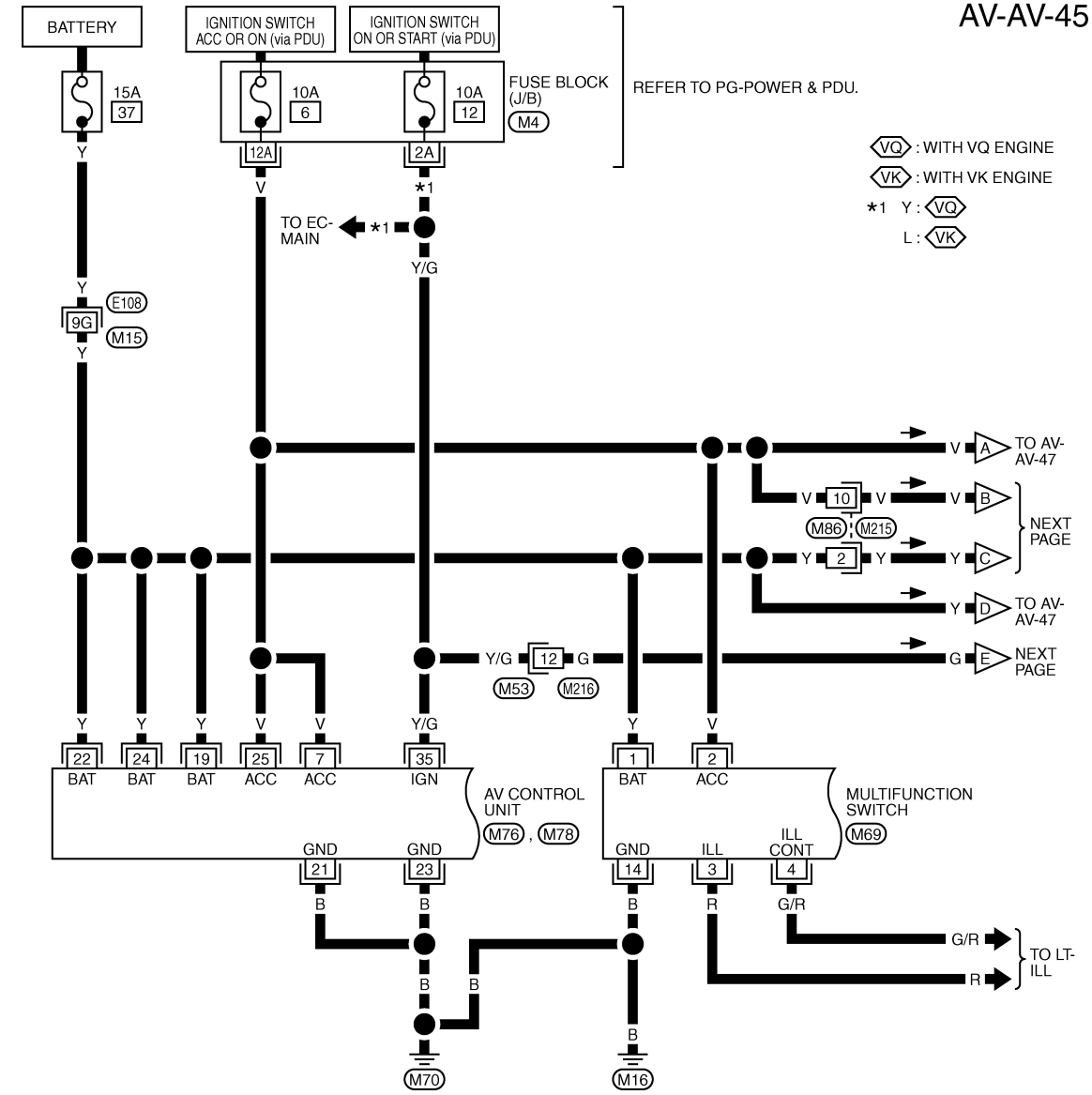
Wiring Diagram - AV - / BOSE Audio 2ch System

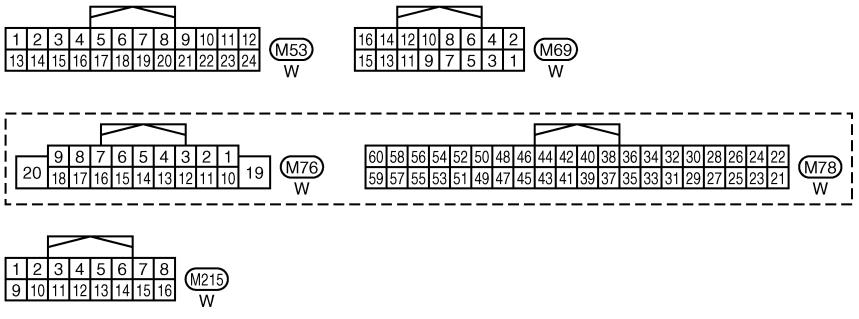
INFOID:0000000004391595

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

AV-AV-45

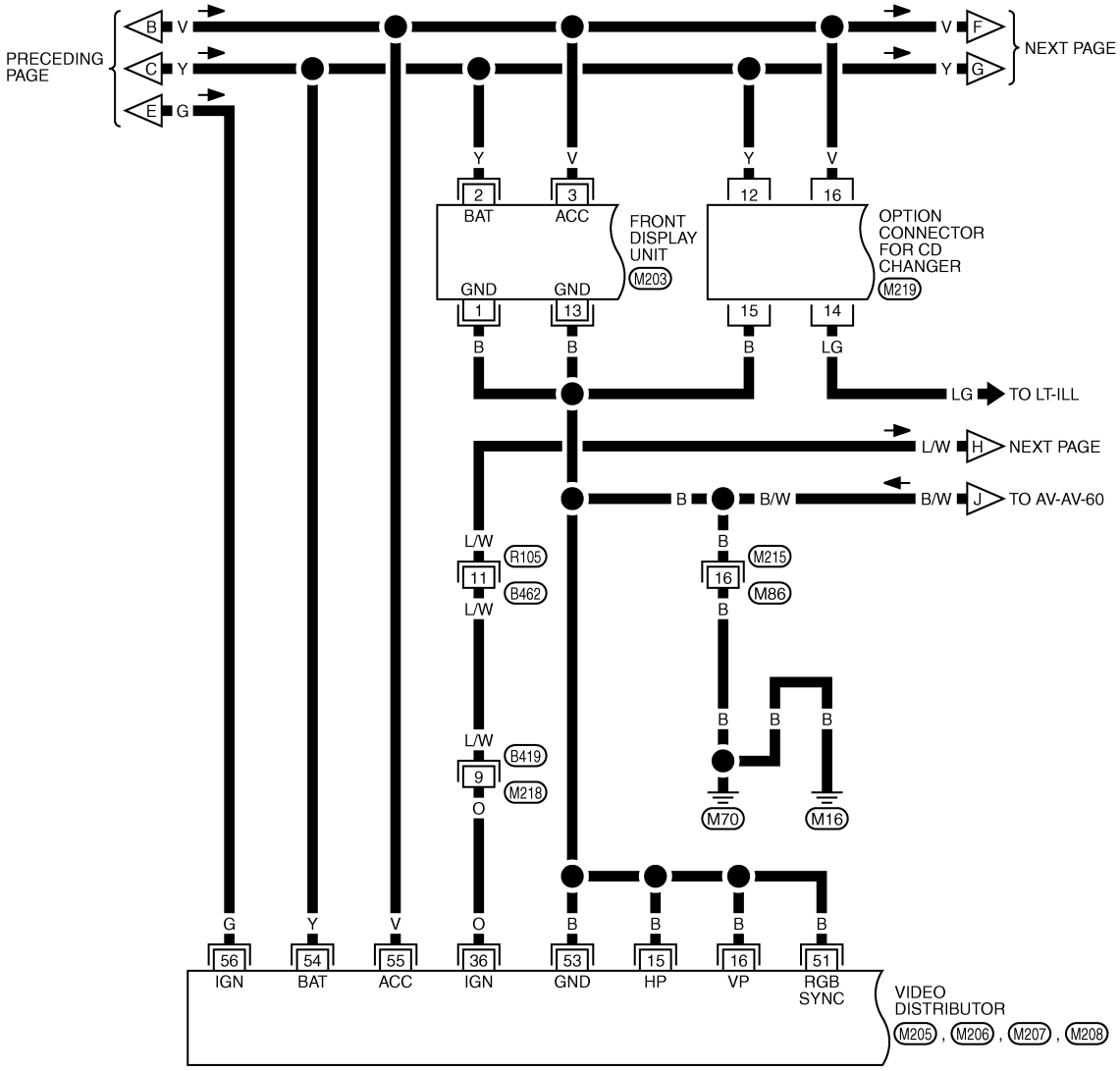


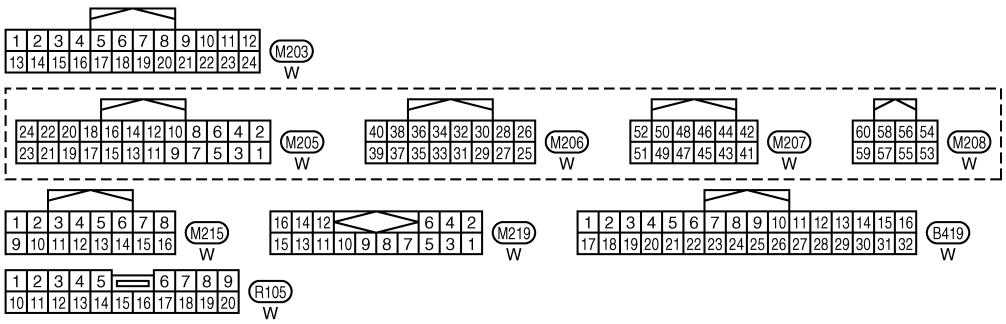


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8291E

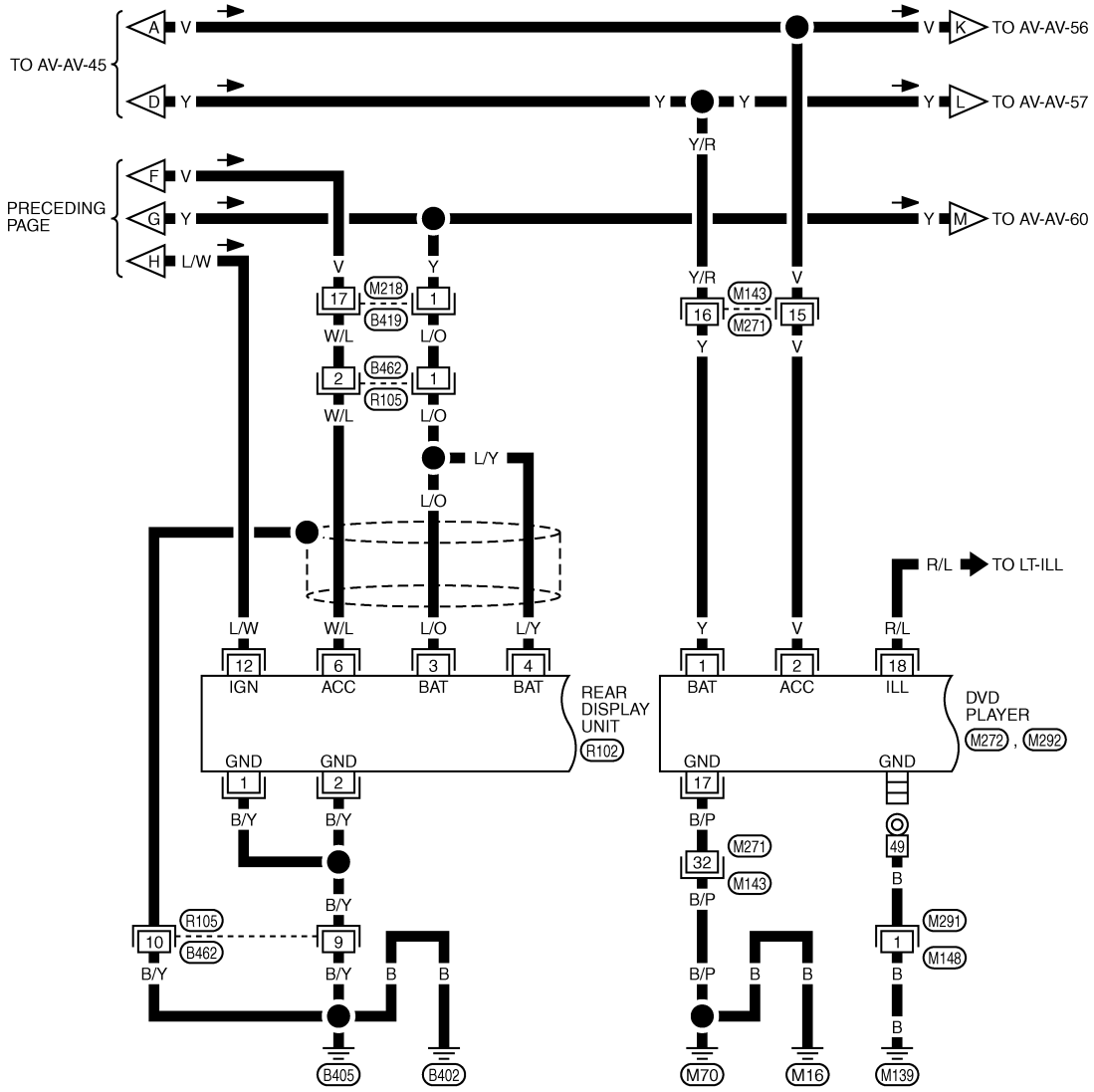
AV-AV-46

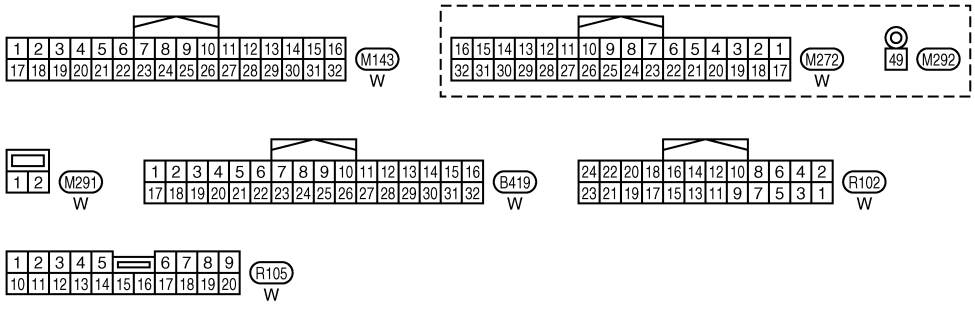




TKWT8292E

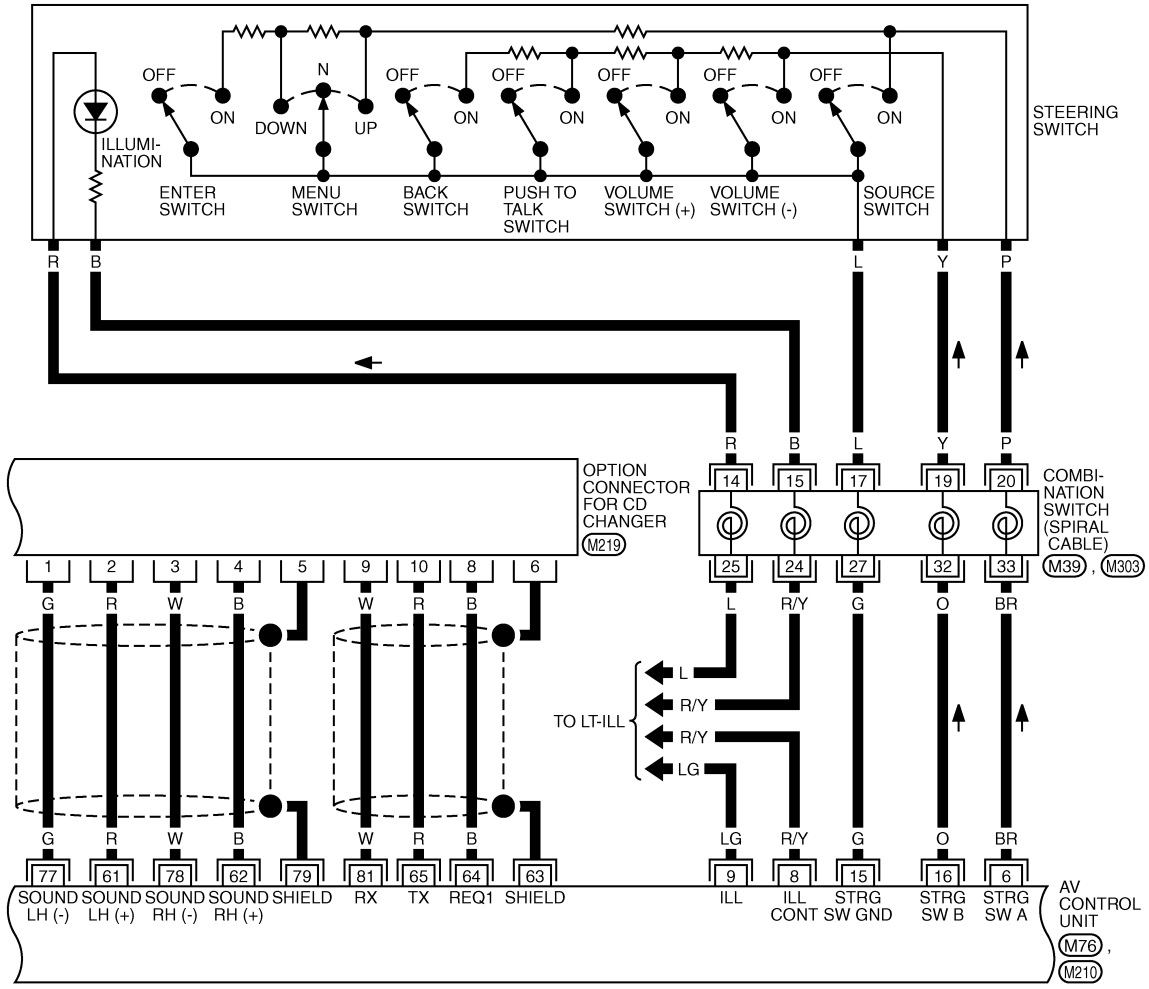
AV-AV-47

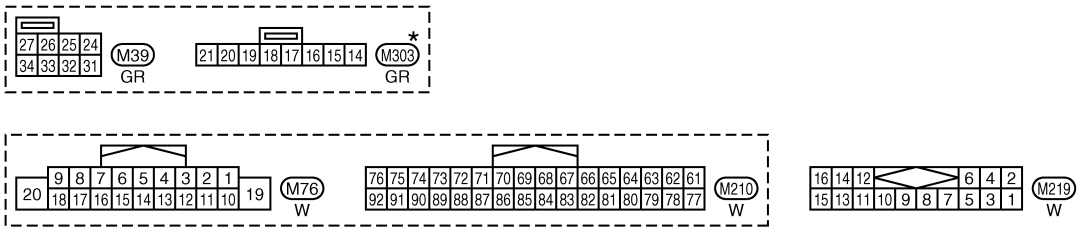




TKWT8293E

AV-AV-48

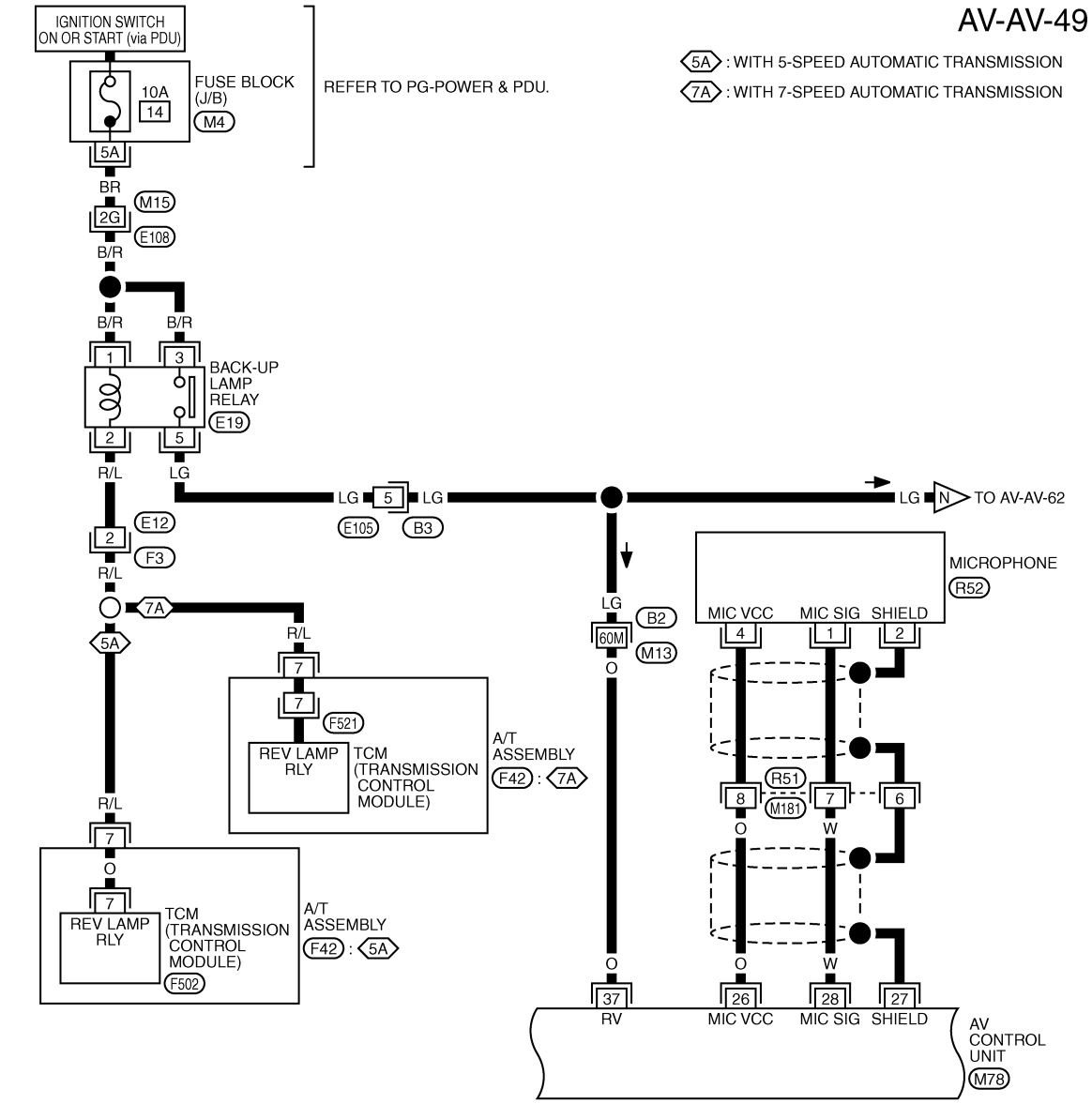


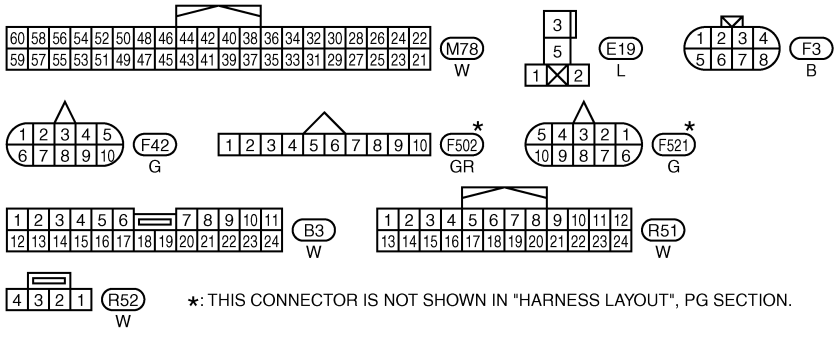


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8294E

AV-AV-49

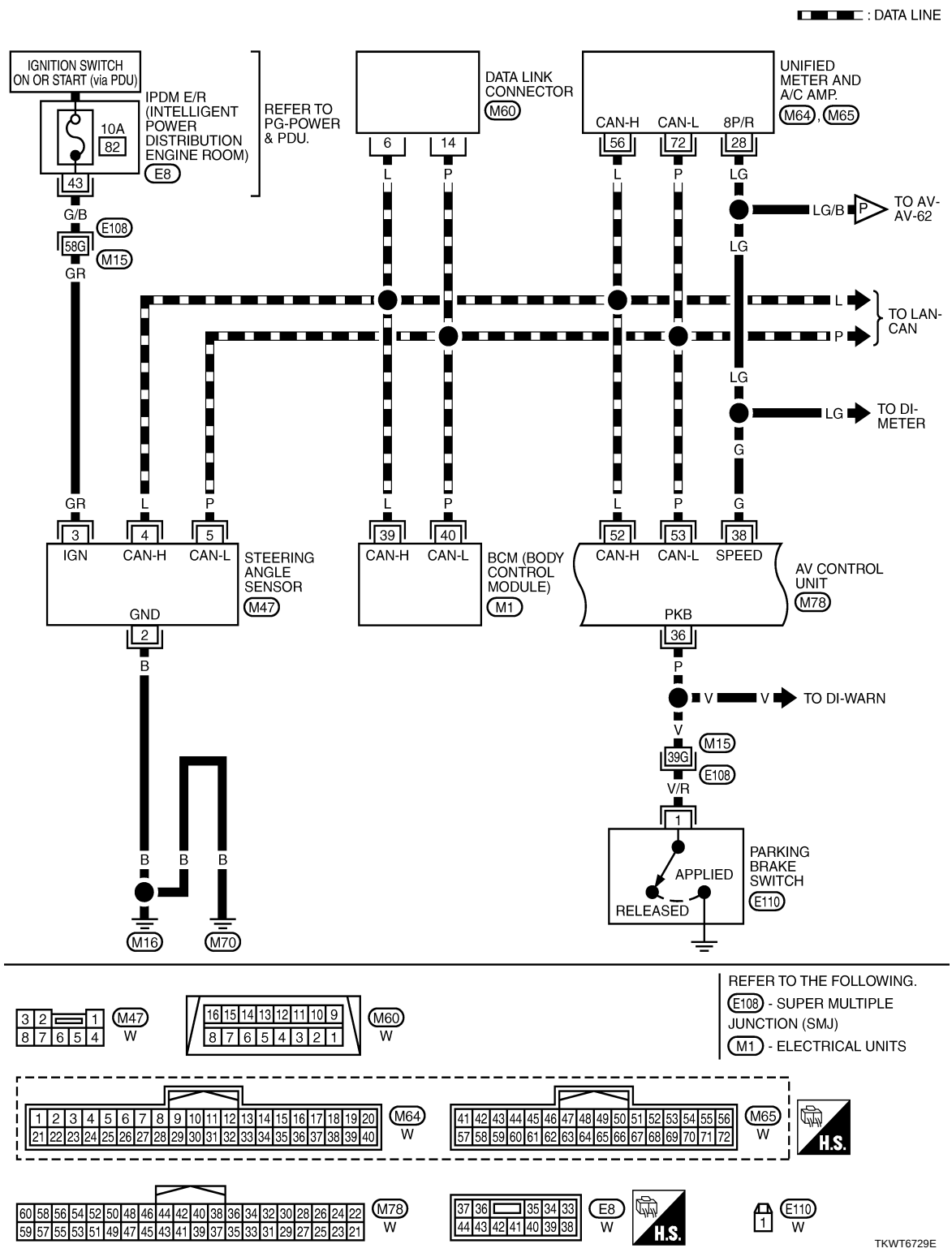




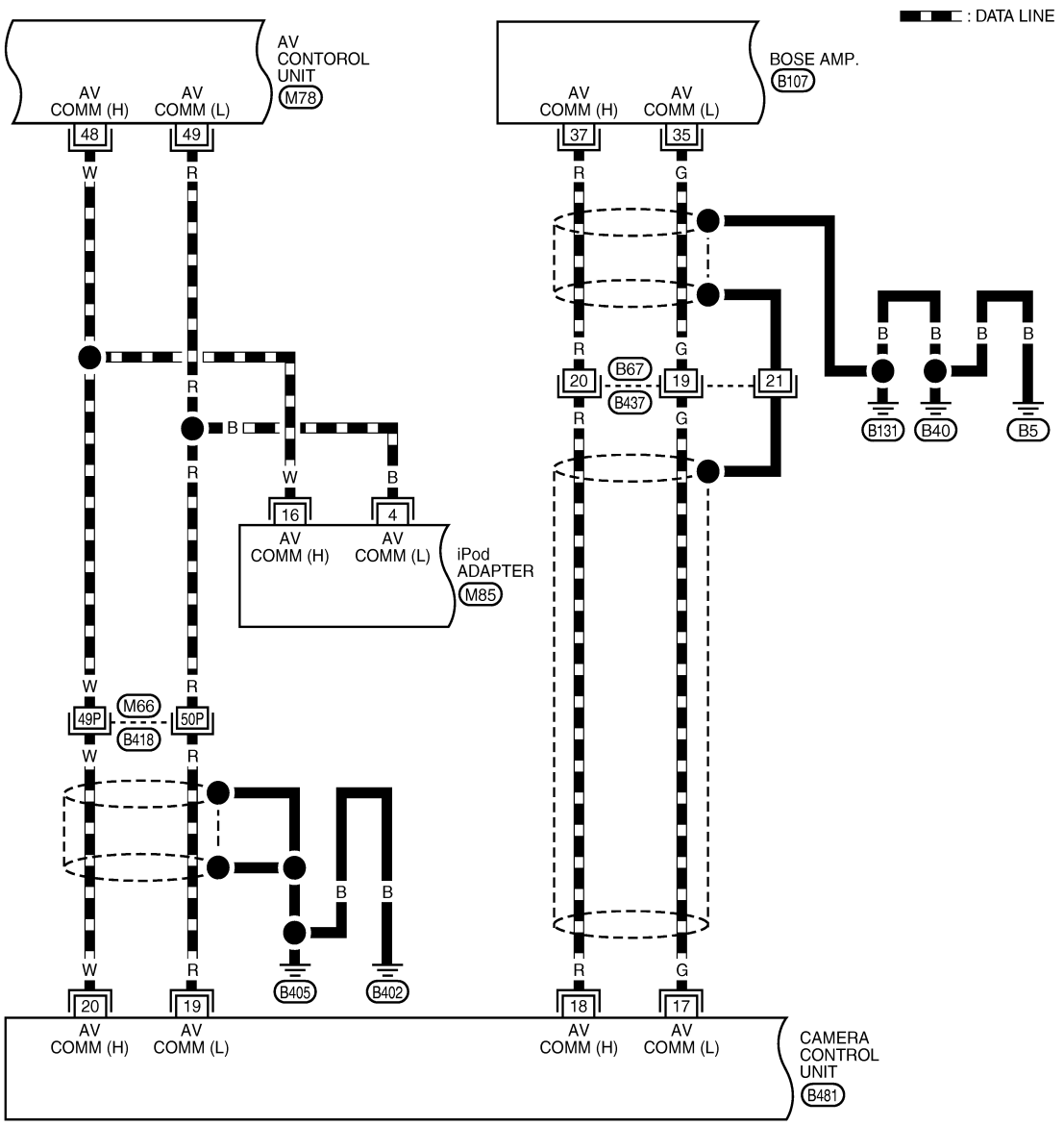
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

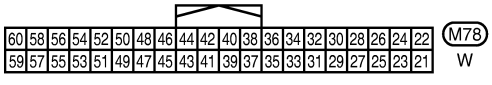
TKWT8295E

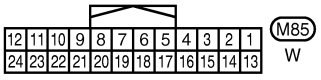
AV-AV-50

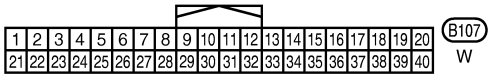

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
REFER TO PG-POWER & PDU.
G/B
E108
58G
M15
GR
DATA LINK CONNECTOR M60
6
14
L
P
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56
72
28
L
P
LG
LG/B P TO AV-AV-62
LG
L
P
TO LAN-CAN
LG
LG TO DI-METER
G
GR L P
3 4 5
IGN CAN-H CAN-L
GND
2
B
STEERING ANGLE SENSOR M47
L P
39 40
CAN-H CAN-L
BCM (BODY CONTROL MODULE) M1
L P G
52 53 38
CAN-H CAN-L SPEED
PKB
36
AV CONTROL UNIT M78
P
V V TO DI-WARN
V
M15
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B B B
M16 M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47 W
M60 W
M64 W
M65 W
H.S.
M78 W
E8 W
E110 W
TKWT6729E

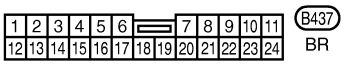
AV-AV-51

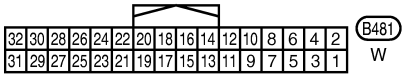








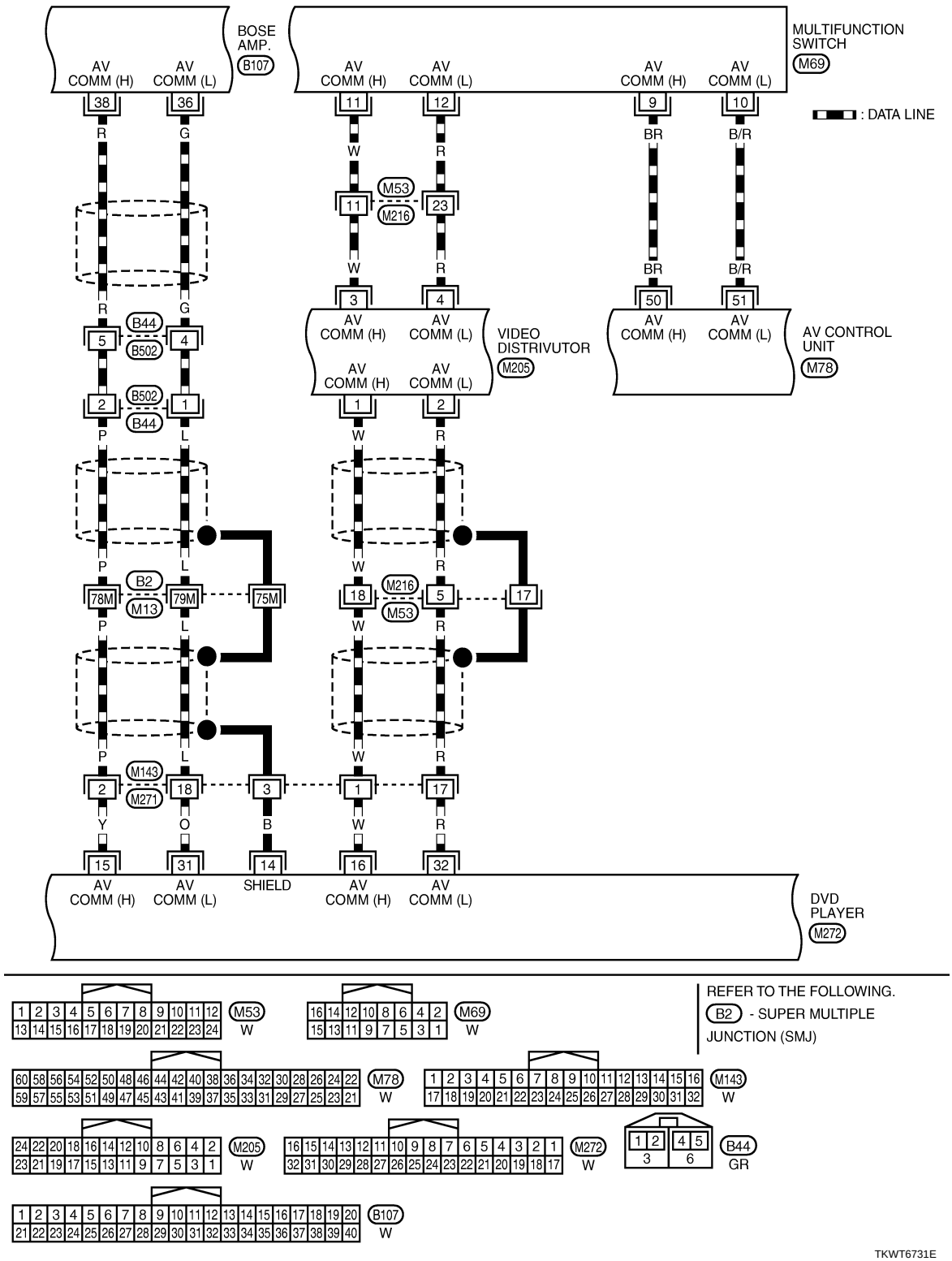




REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

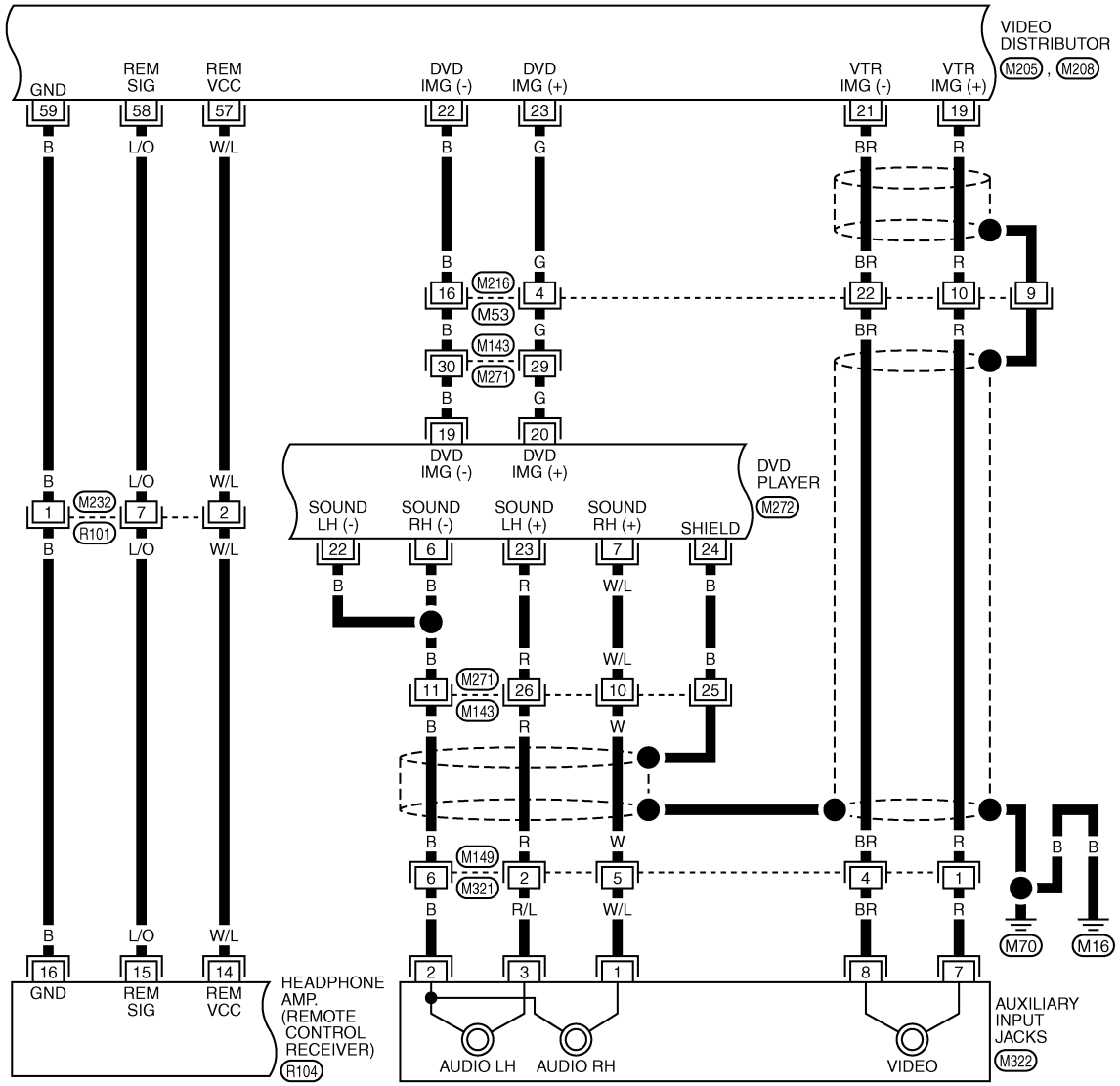
TKWT6730E

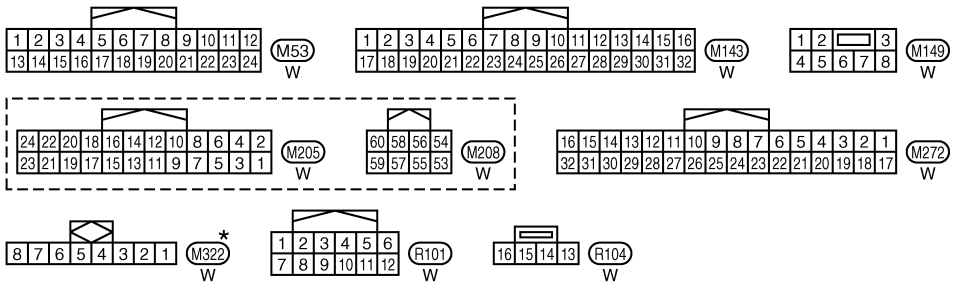
AV-AV-52



TKWT6731E

AV-AV-53

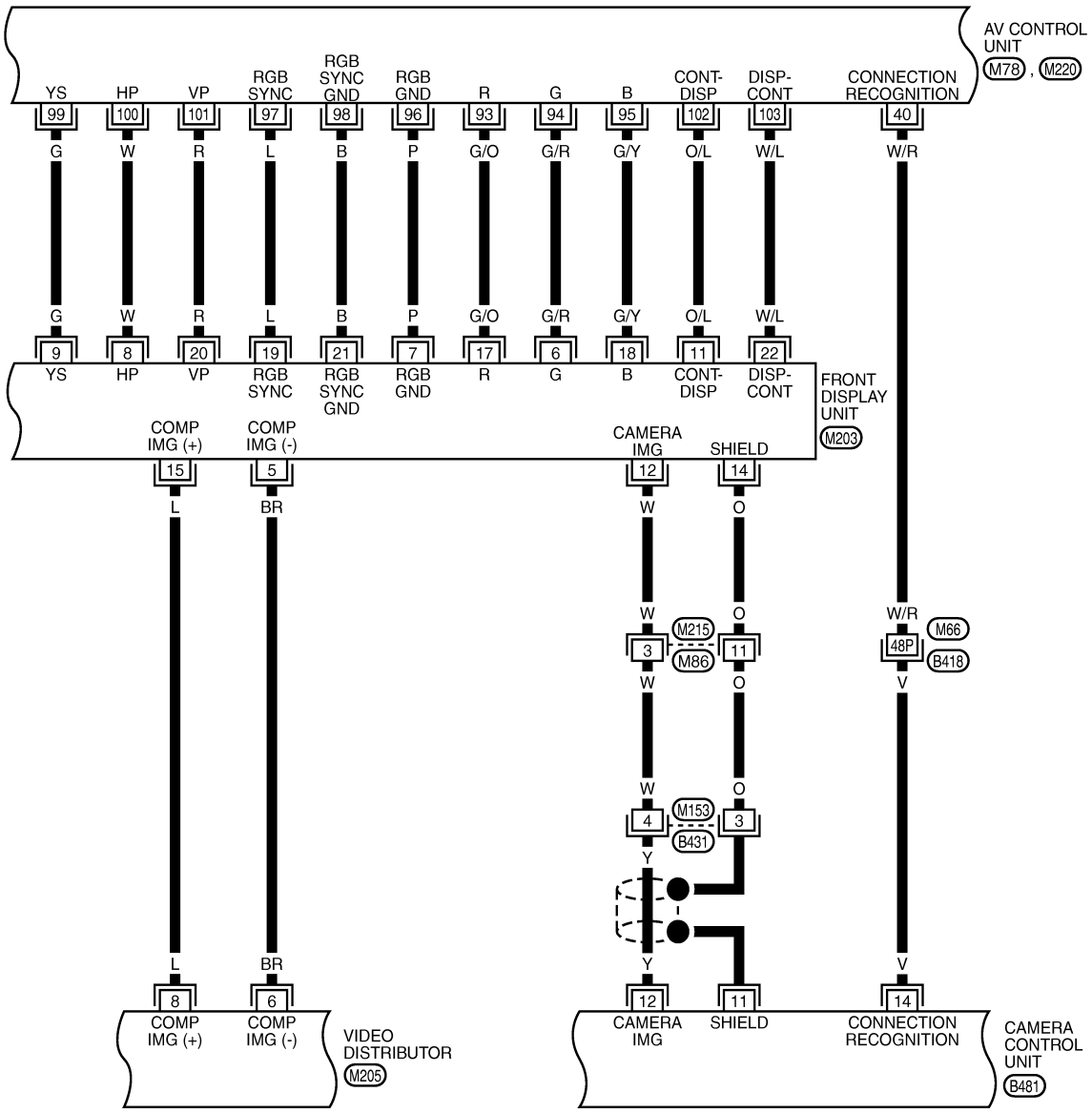


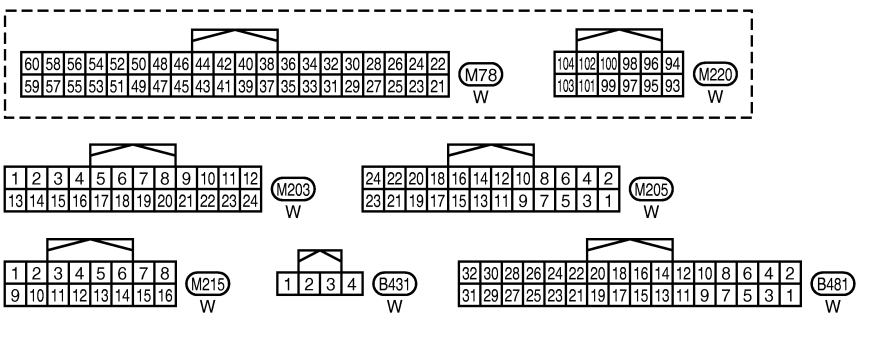


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8296E

AV-AV-54

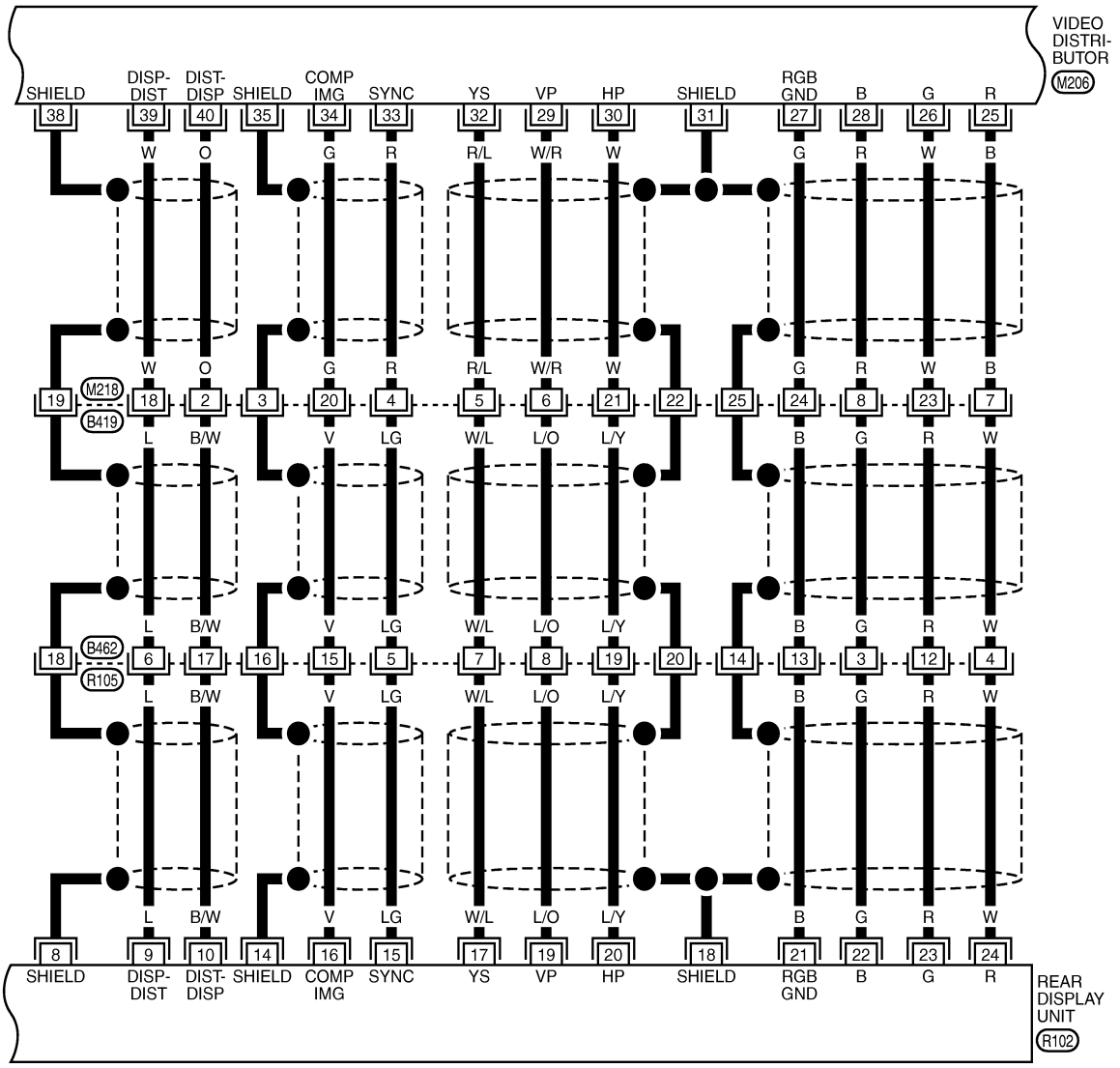


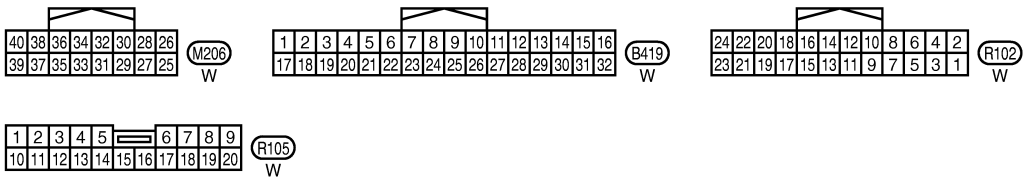


REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT6733E

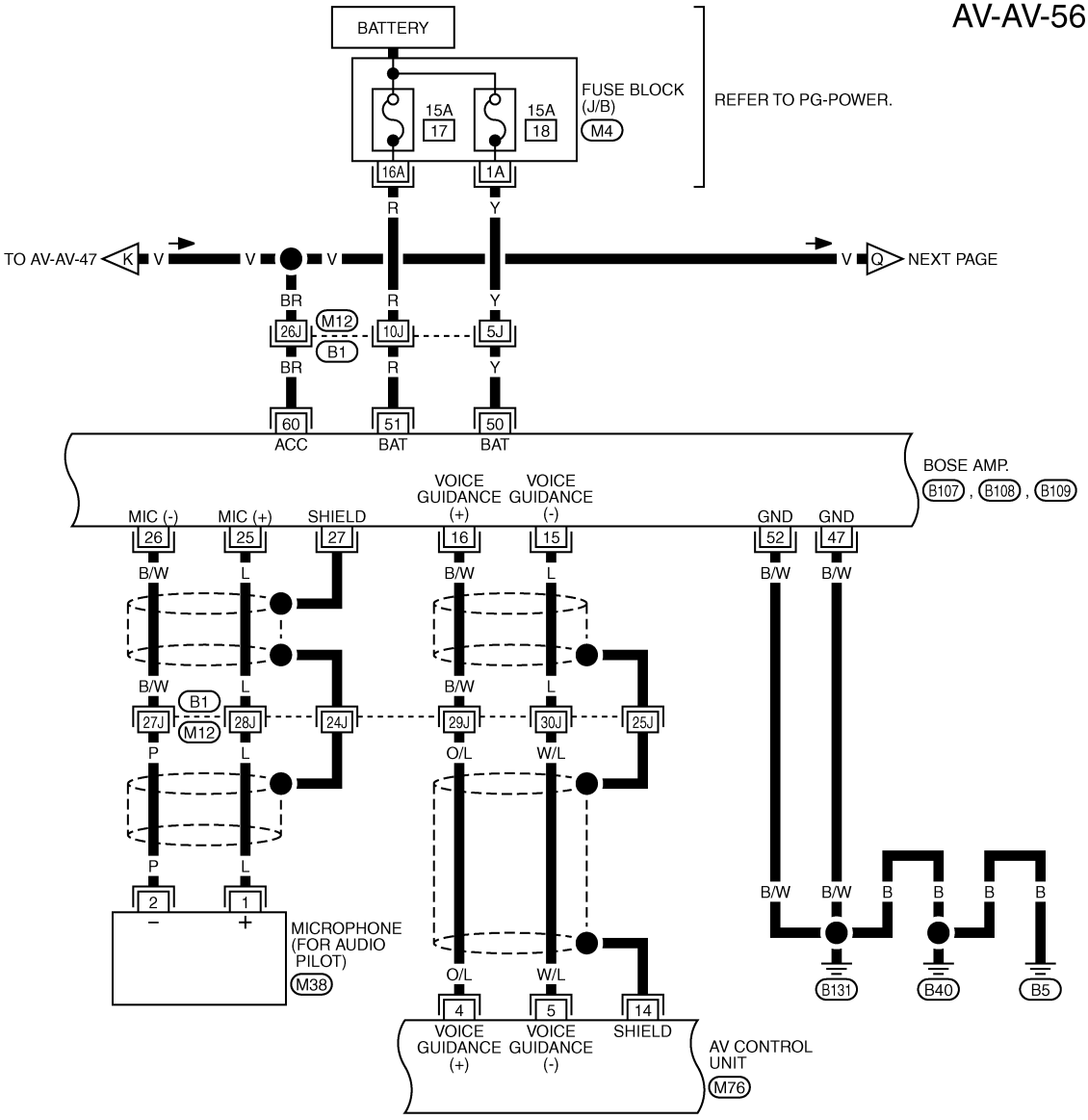
AV-AV-55

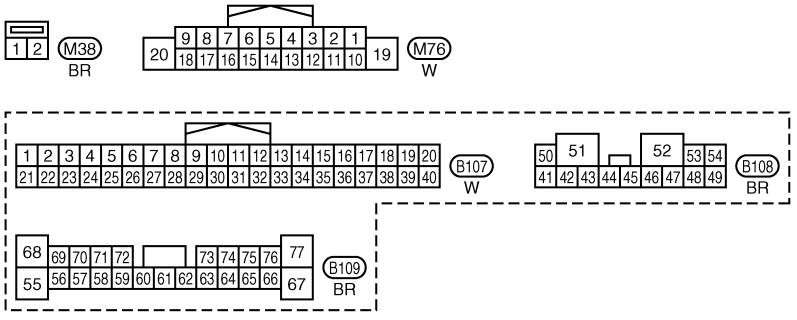




TKWT6734E

AV-AV-56



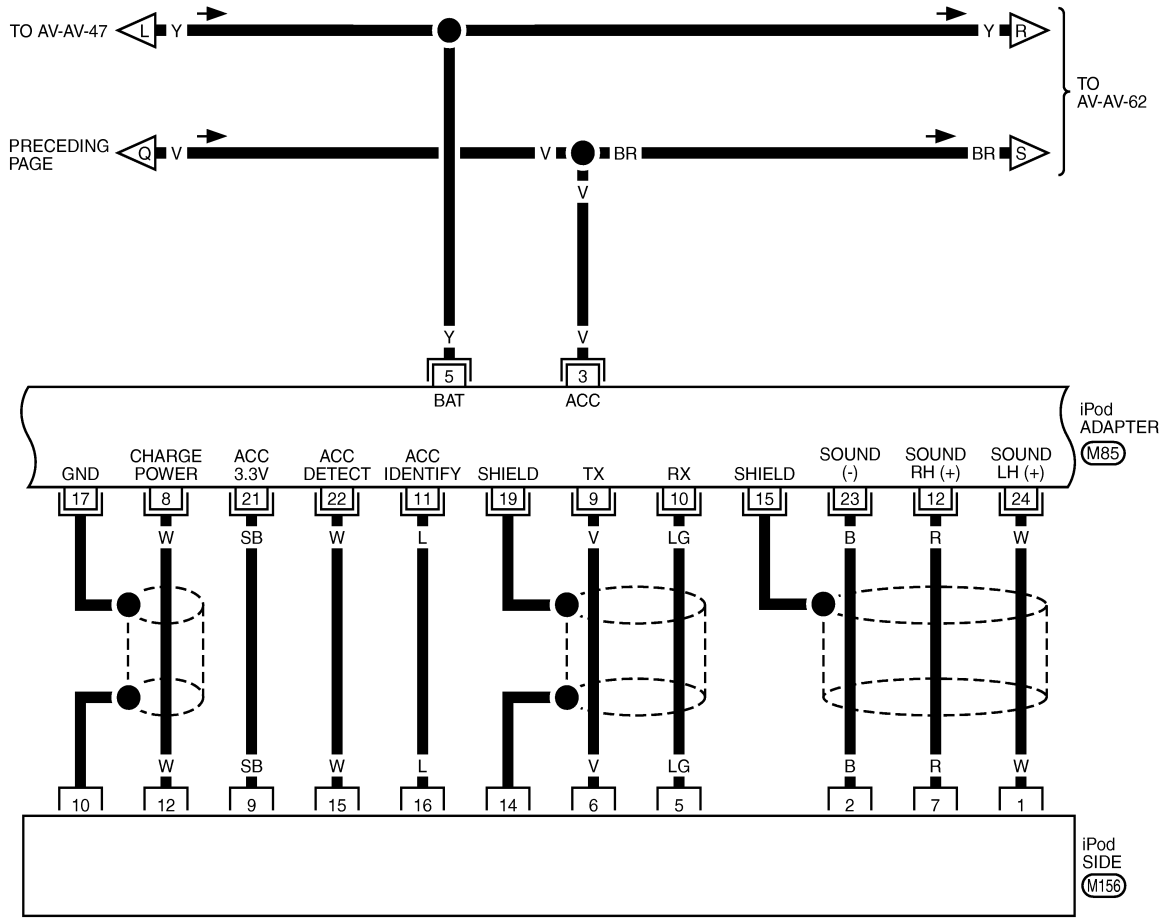


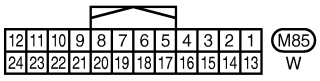
REFER TO THE FOLLOWING.

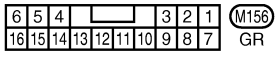
B1 -SUPER MULTIPLE JUNCTION (SMJ)

M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8297E

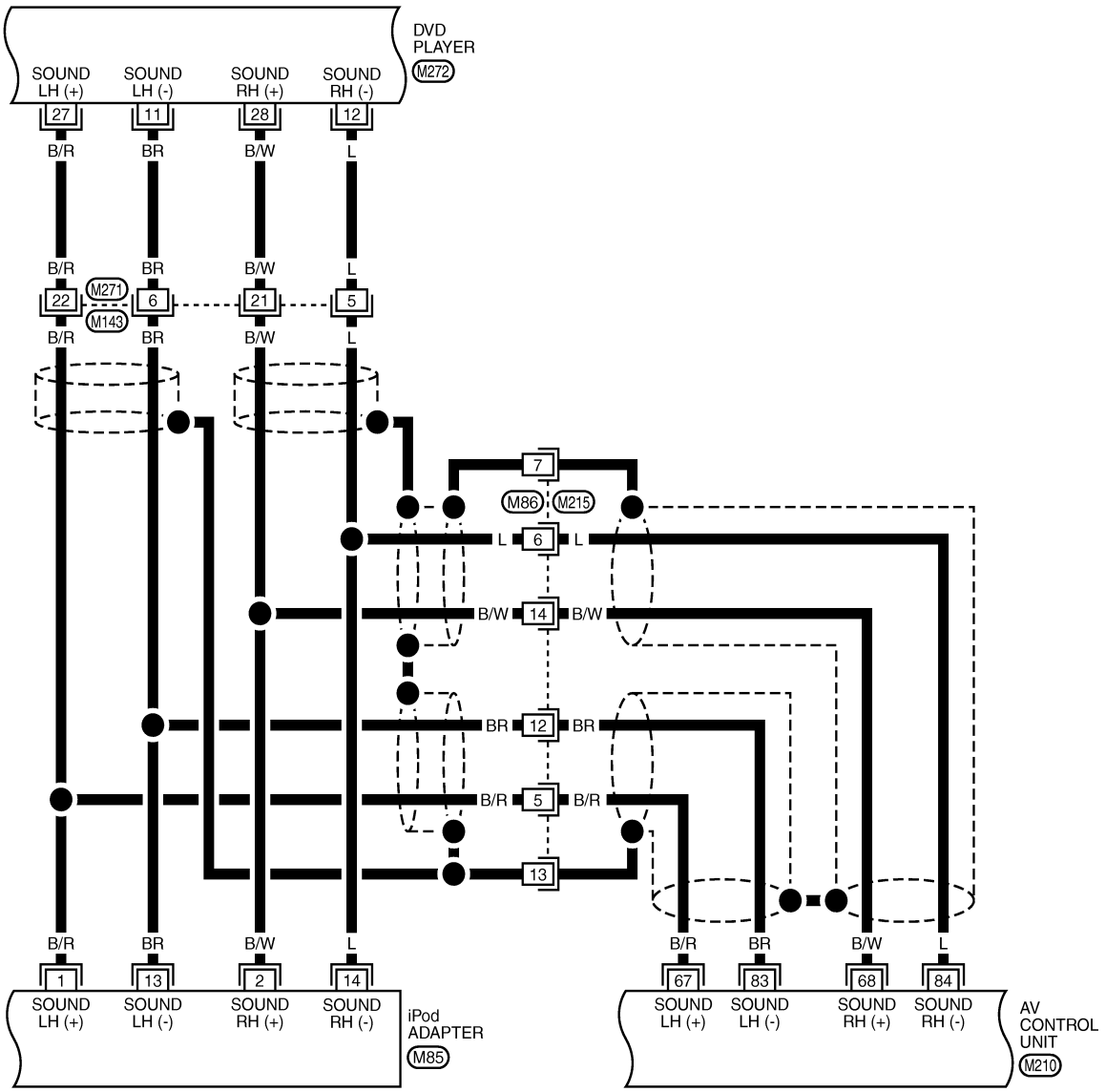

TO AV-AV-47
L
Y
Y
R
TO
AV-AV-62
PRECEDING
PAGE
Q
V
V
BR
BR
S
V
Y
V
5
BAT
3
ACC
iPod
ADAPTER
M85
GND
CHARGE
POWER
ACC
3.3V
ACC
DETECT
ACC
IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND
(-)
SOUND
RH (+)
SOUND
LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod
SIDE
M156

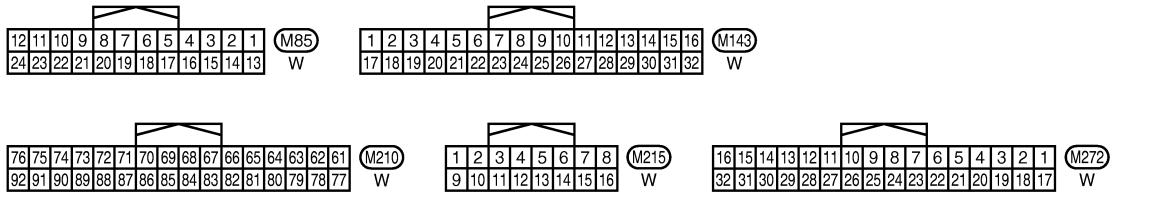

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6737E

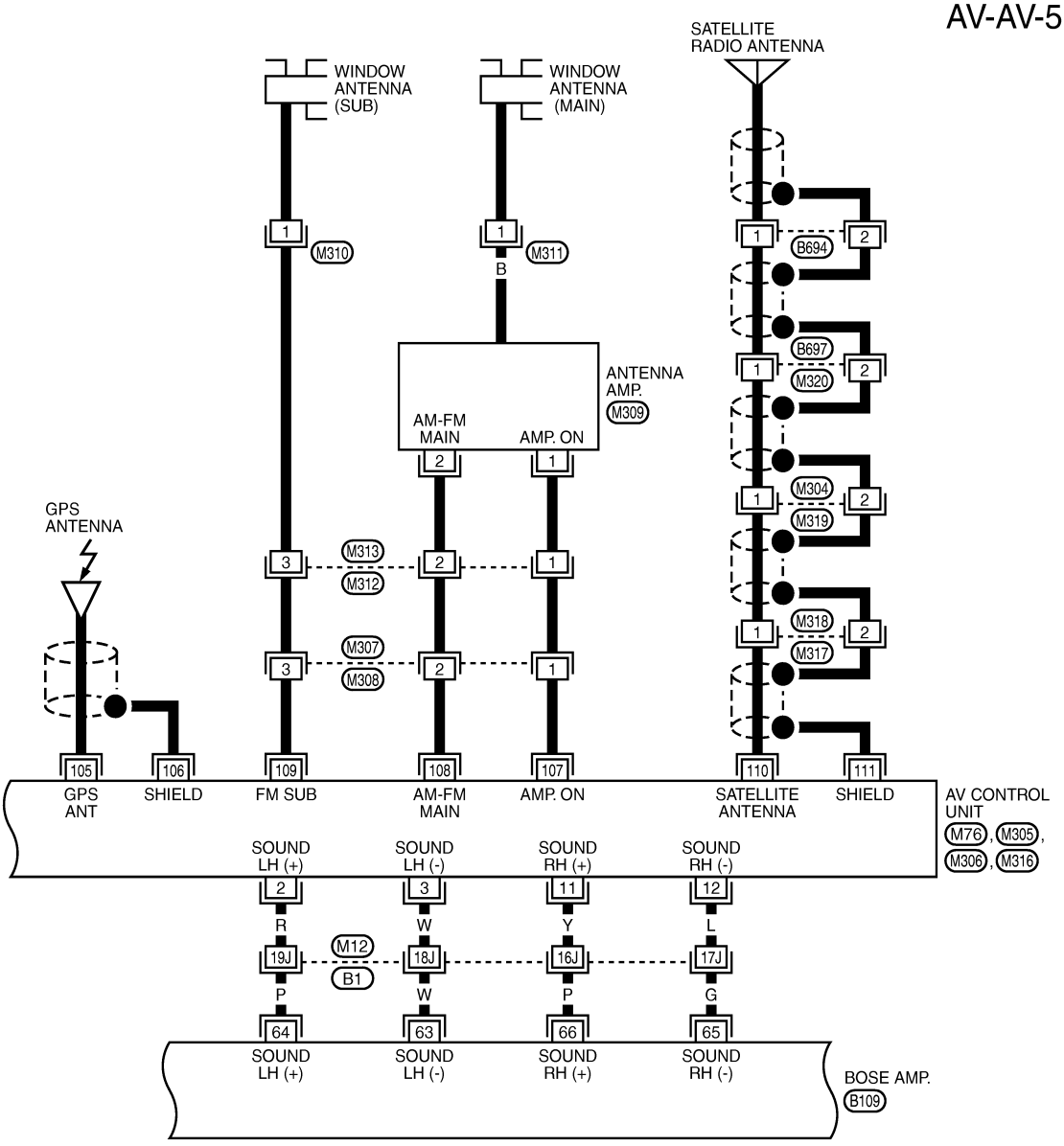
AV-AV-58

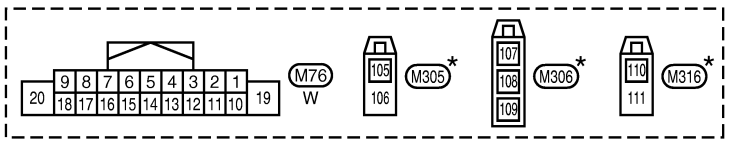




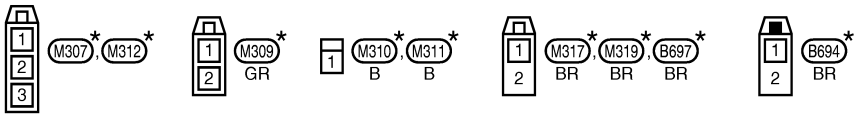
TKWT6738E

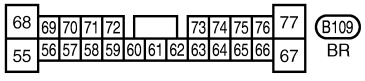
AV-AV-59





REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

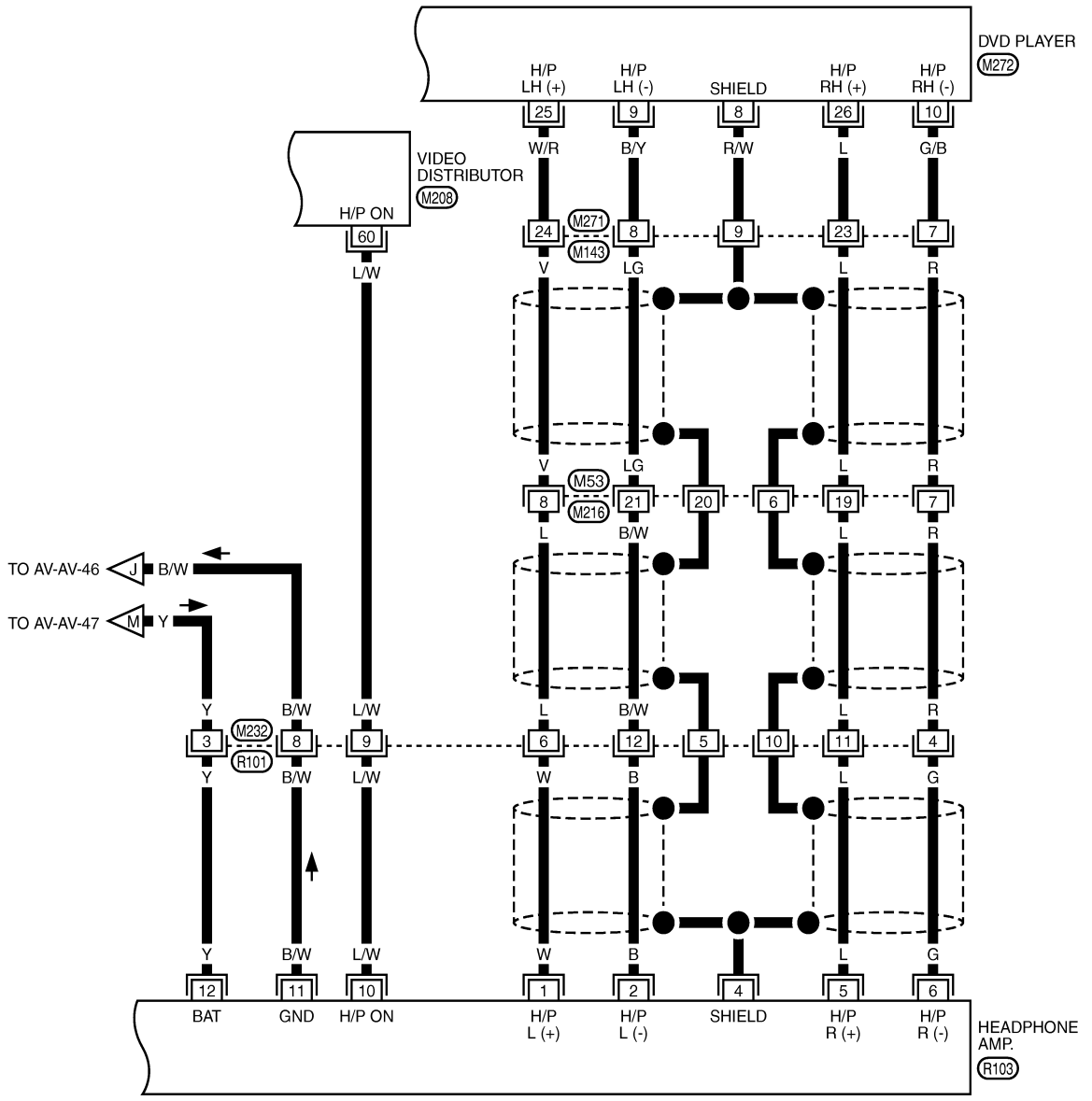


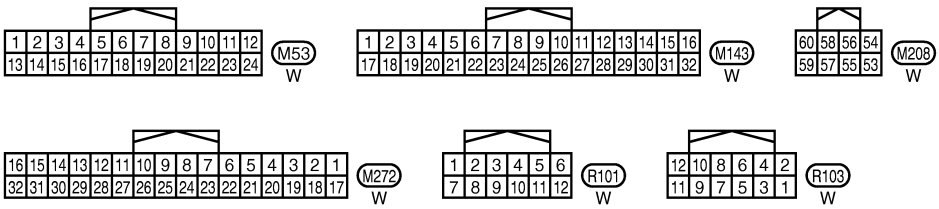


* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.

TKWT6739E

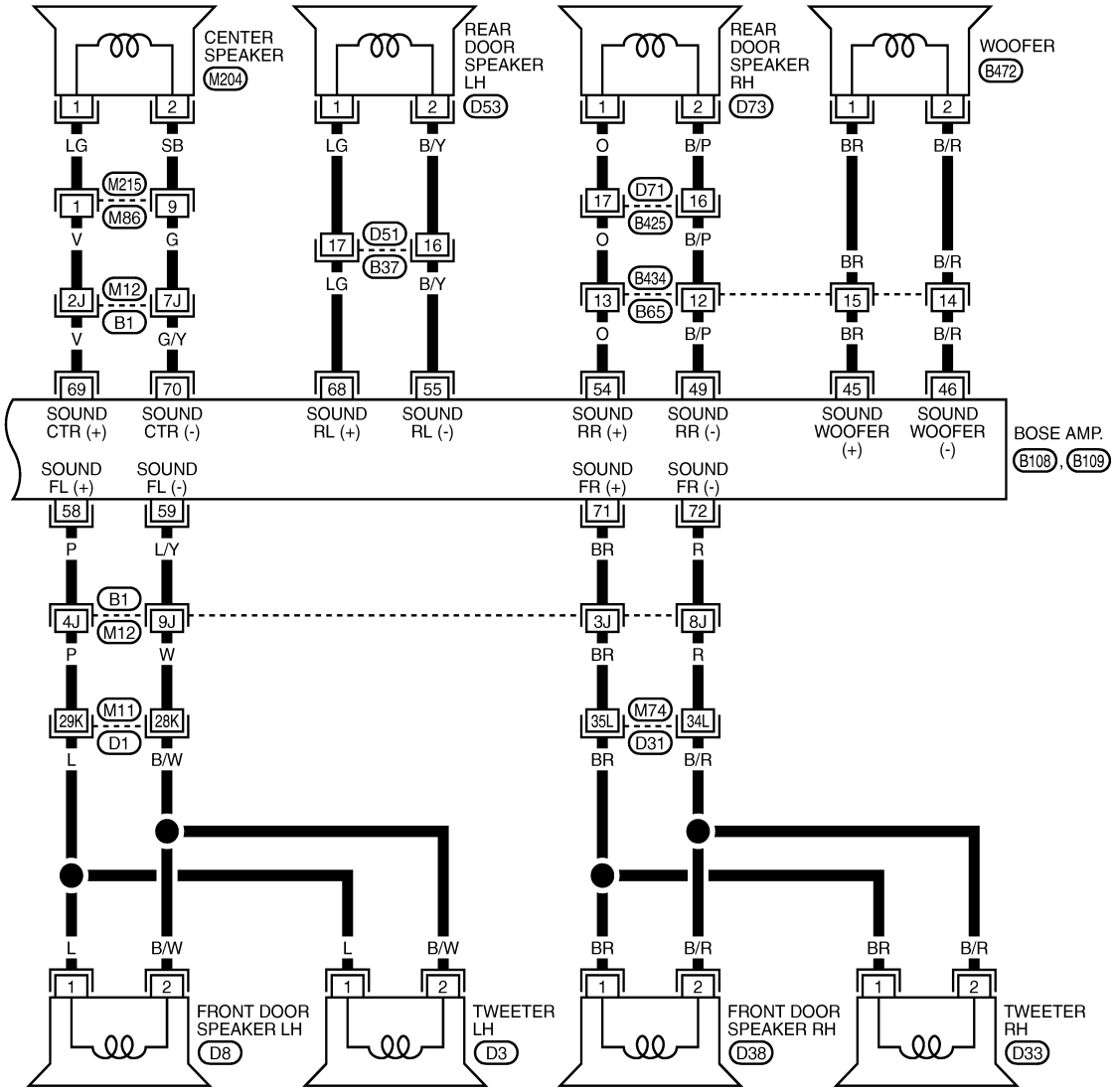
AV-AV-60

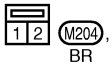


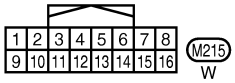


TKWT6740E

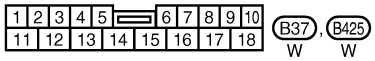
AV-AV-61

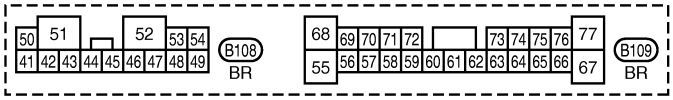


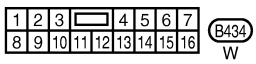


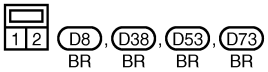


REFER TO THE FOLLOWING.
B1, D1, D31 - SUPER MULTIPLE JUNCTION (SMJ)



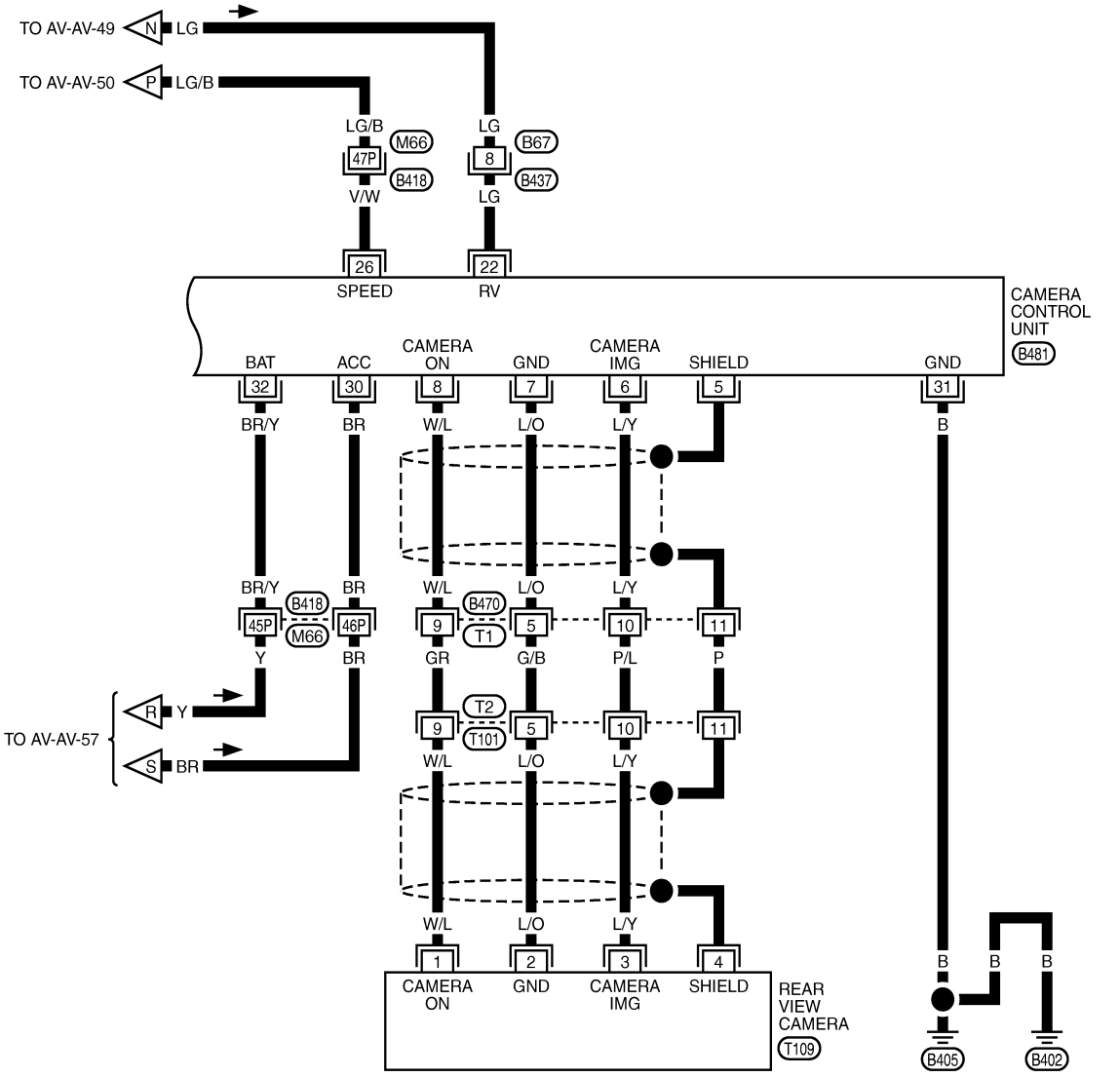


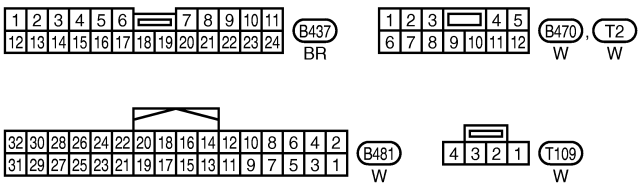




TKWT6741E

AV-AV-62



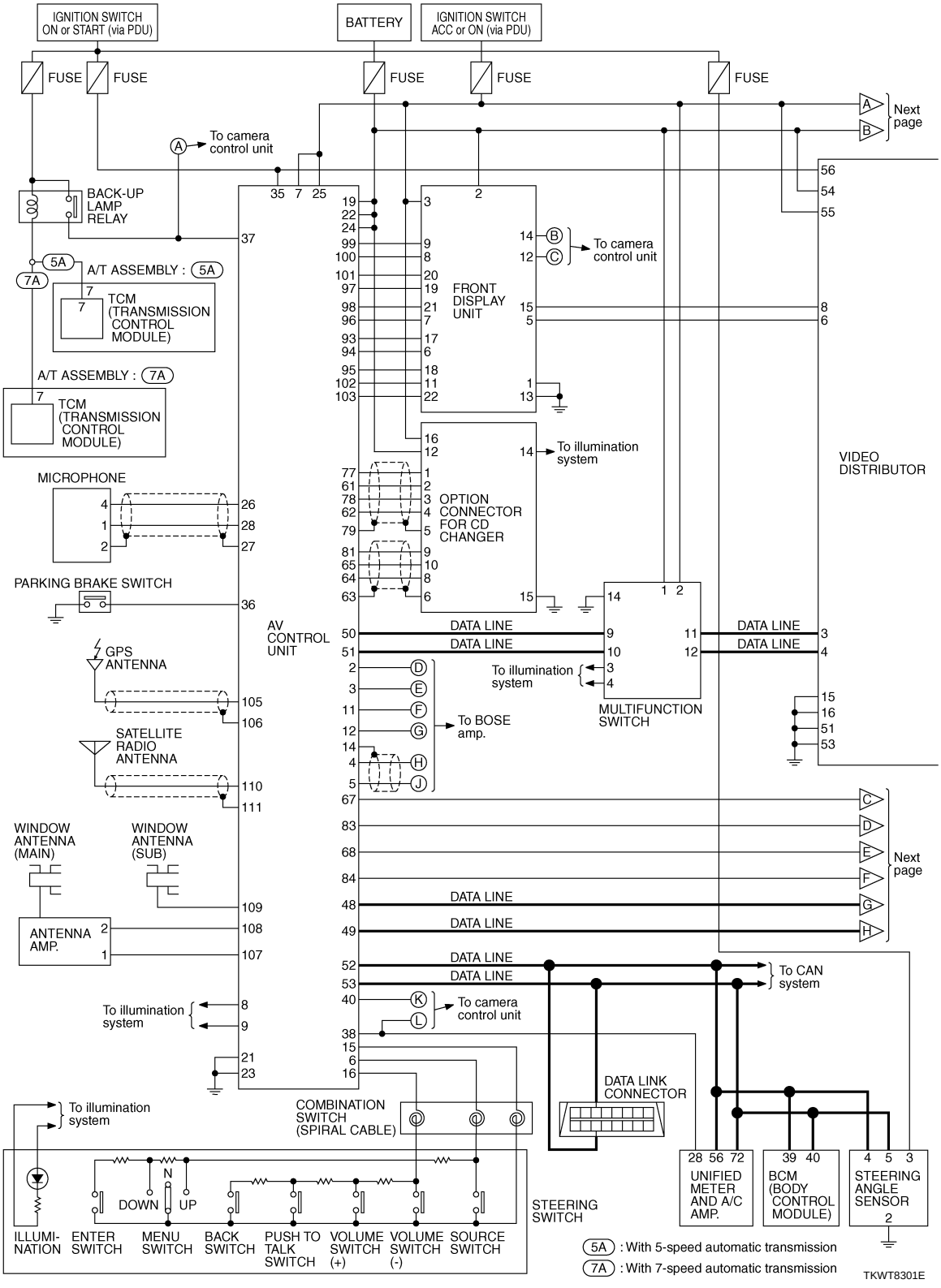


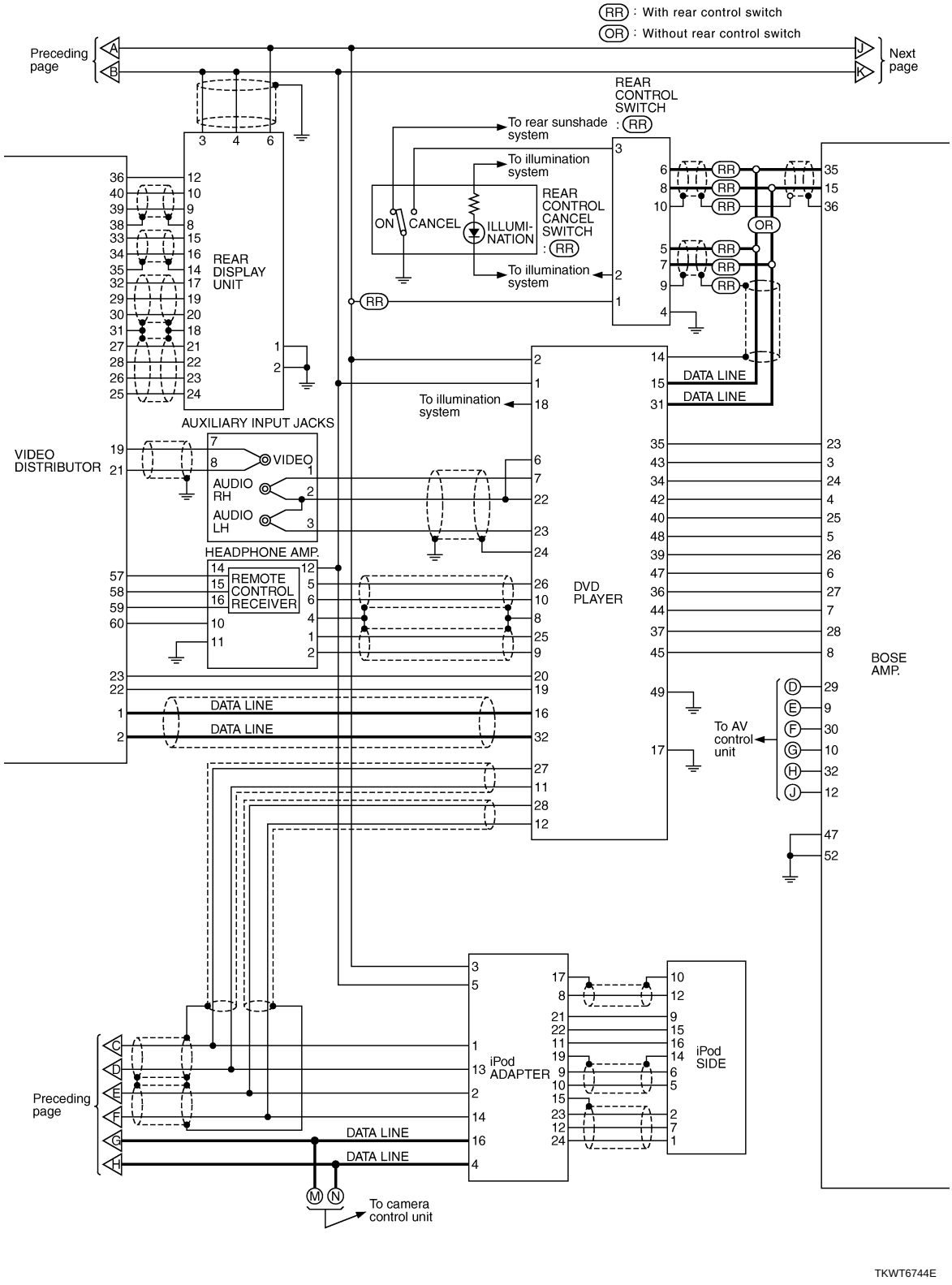
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

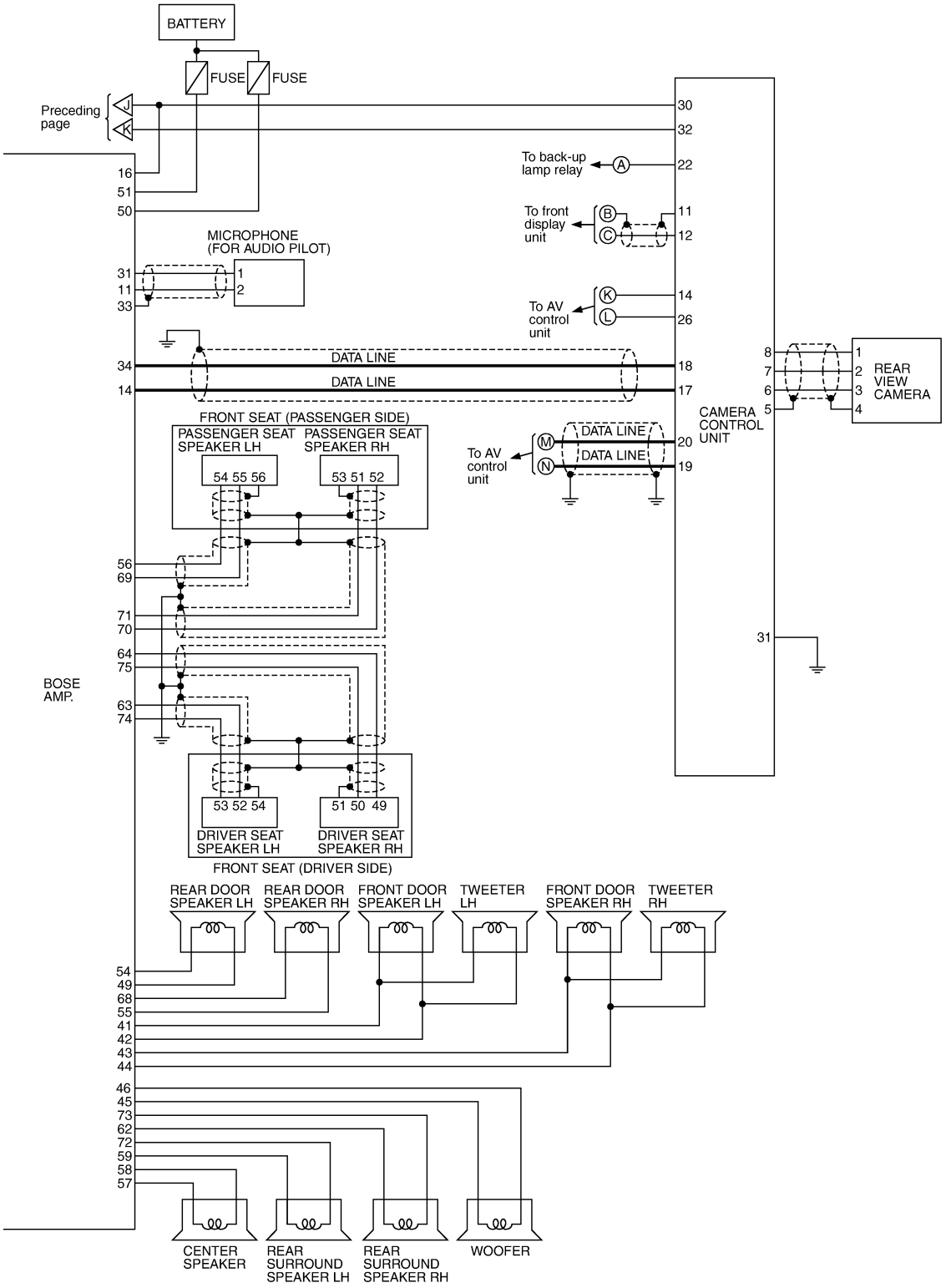
TKWT6742E

Schematic - BOSE 5.1ch Surround Audio System -

INFOID:0000000004391596




RR : With rear control switch
OR : Without rear control switch
Preceding page
Next page
REAR CONTROL SWITCH : RR
To rear sunshade system
To illumination system
REAR CONTROL CANCEL SWITCH : RR
ON
CANCEL
ILLUMI-NATION
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
DVD PLAYER
DATA LINE
BOSE AMP.
To AV control unit
iPod ADAPTER
iPod SIDE
To camera control unit
TKWT6744E



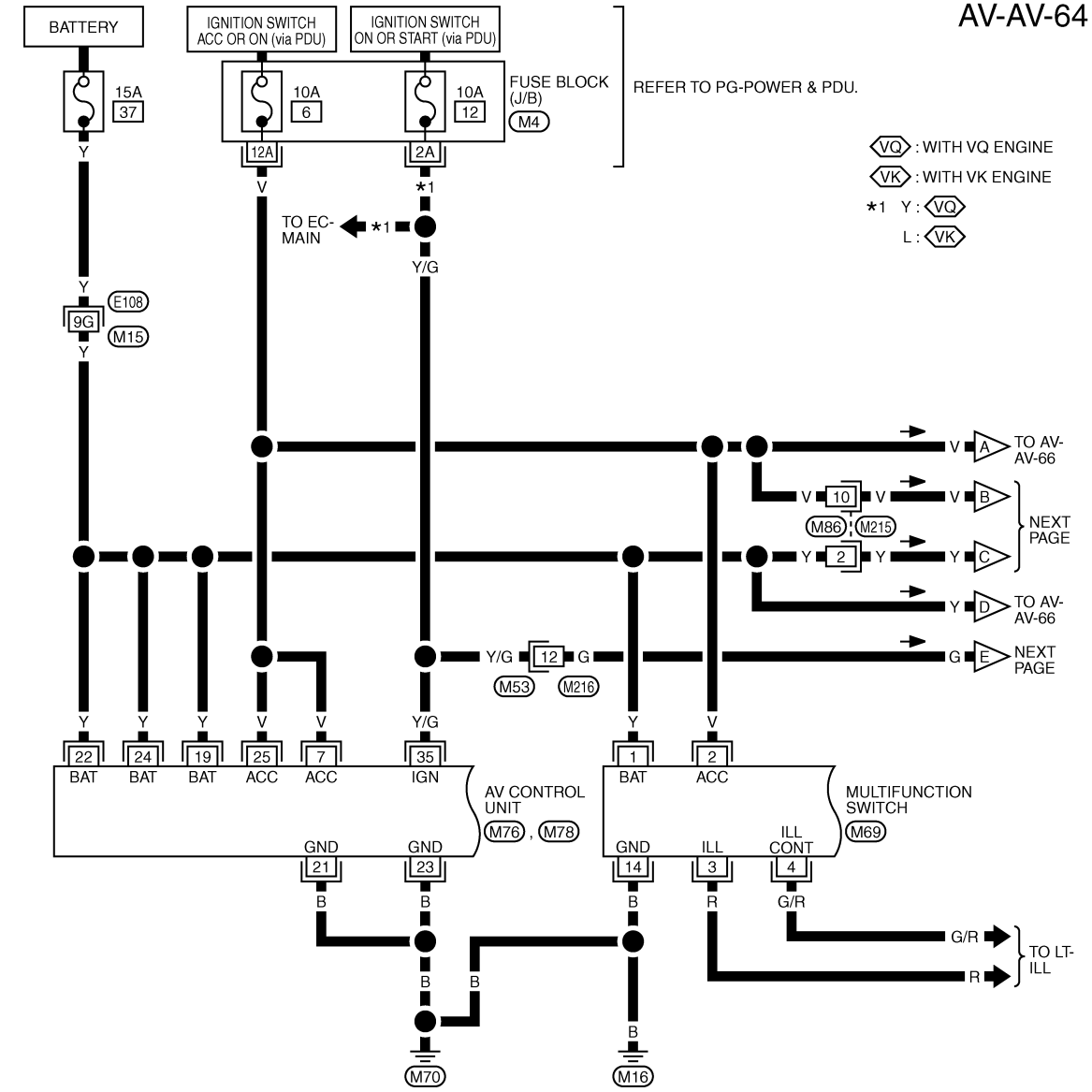
TKWT6745E

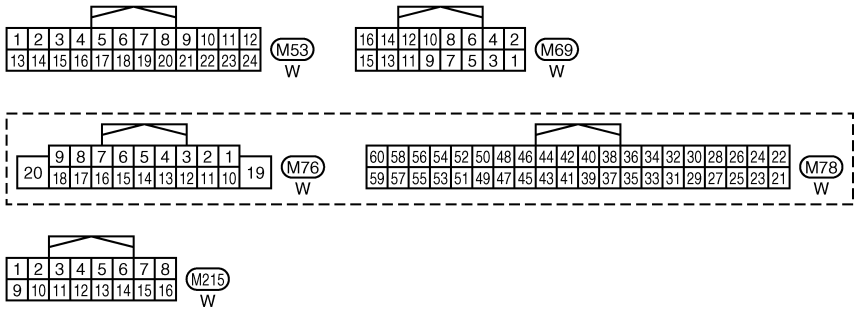
Wiring Diagram - AV - / BOSE Surround Audio 5.1ch System

INFOID:0000000004391597

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

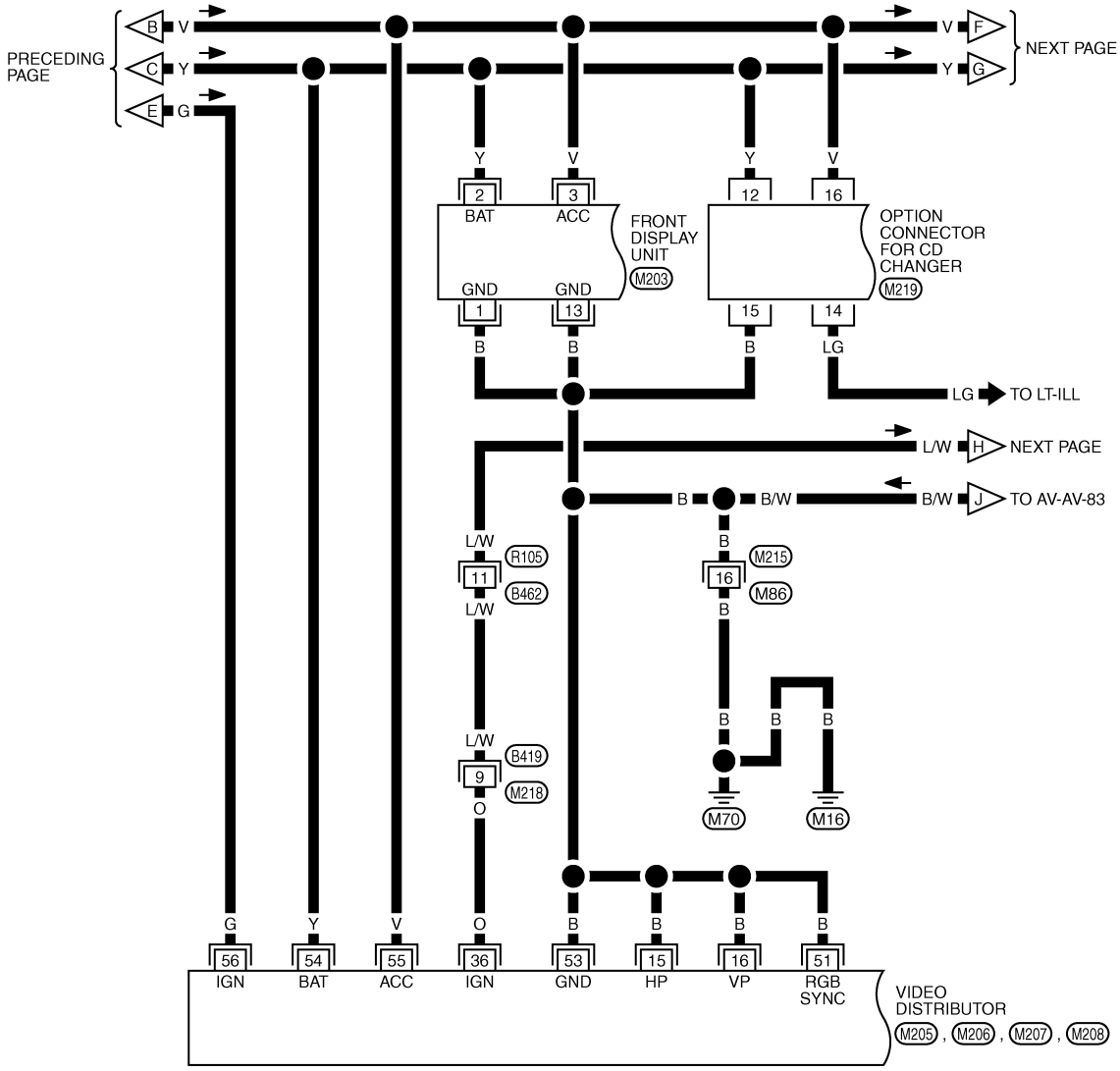


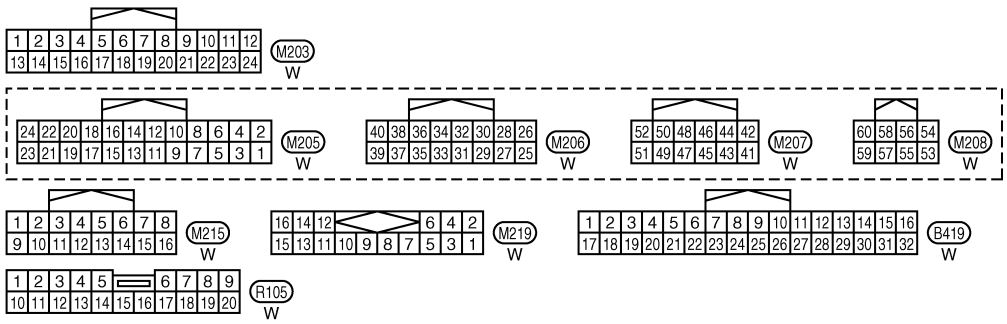


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8302E

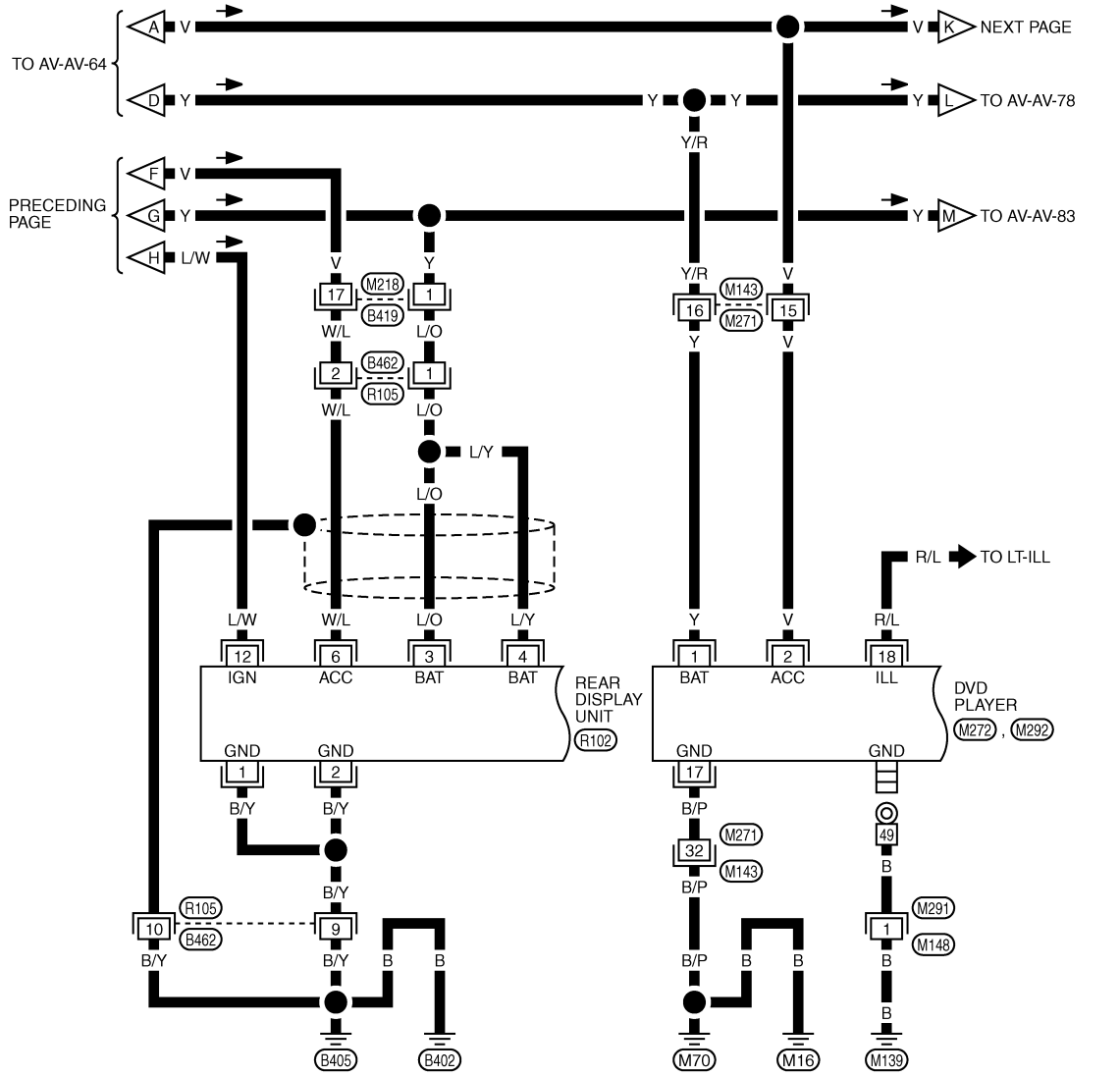
AV-AV-65

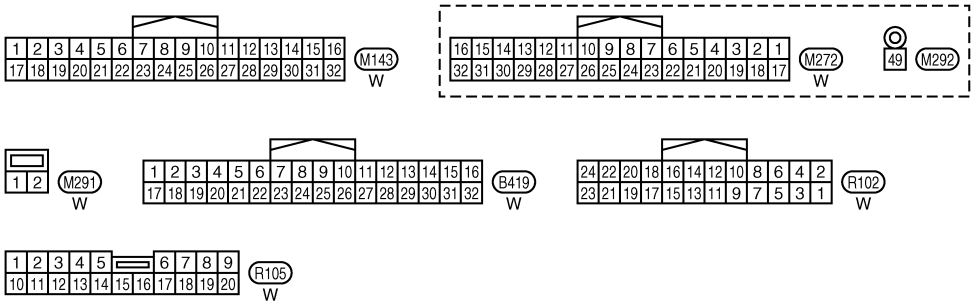




TKWT8303E

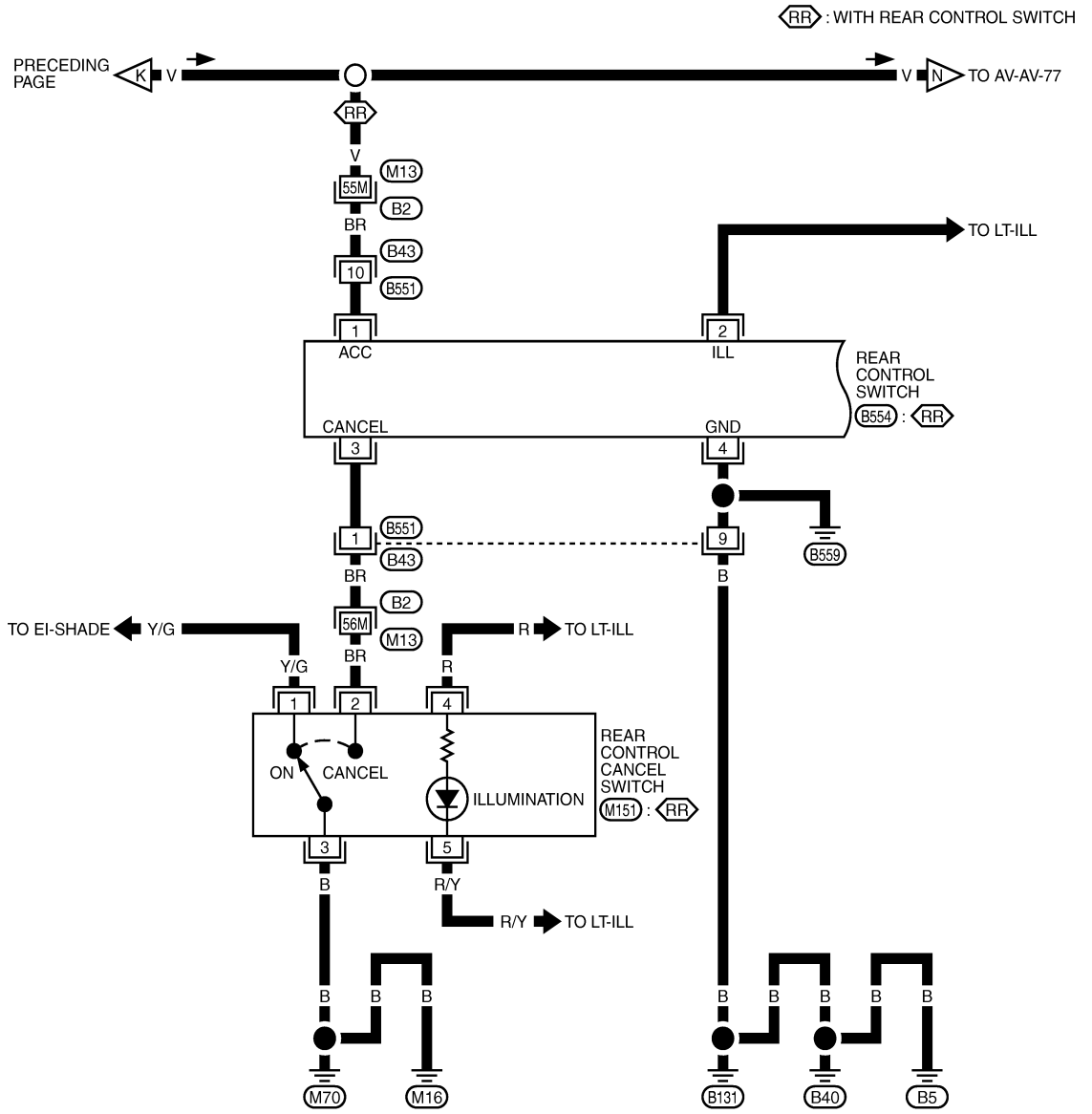
AV-AV-66

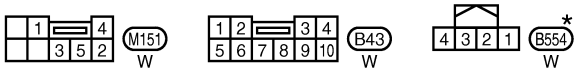




TKWT8304E

AV-AV-67



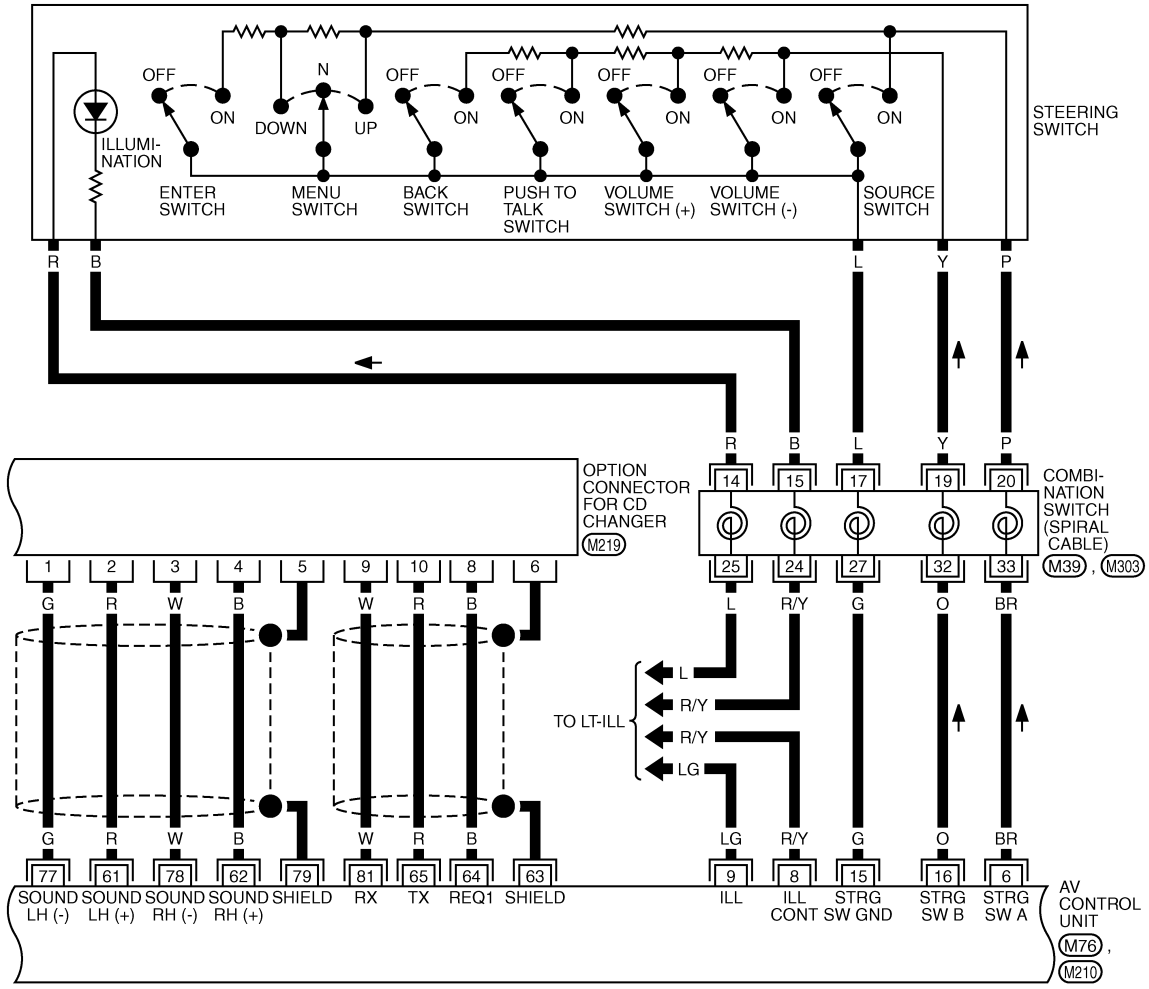


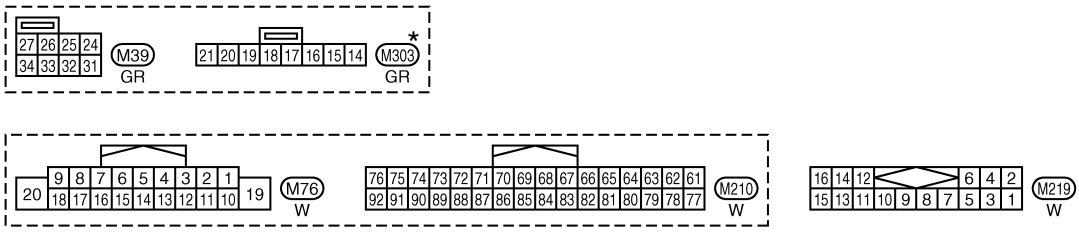
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6749E

AV-AV-68

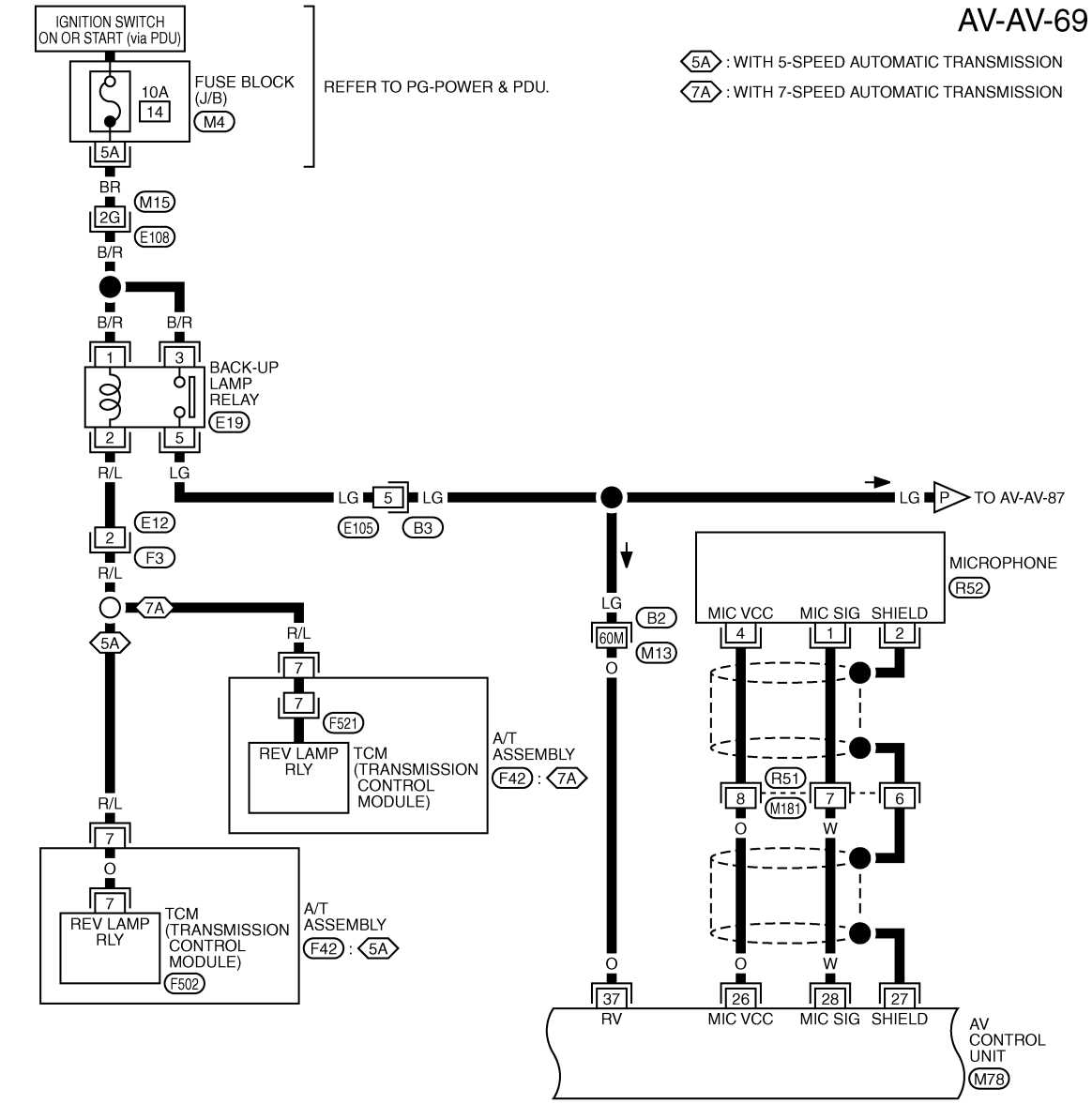


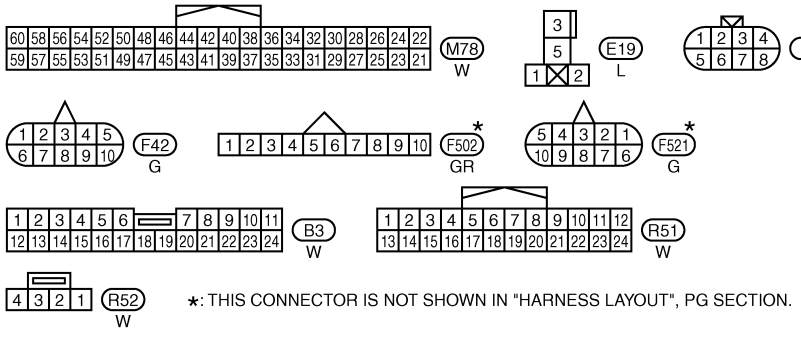


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8305E

AV-AV-69

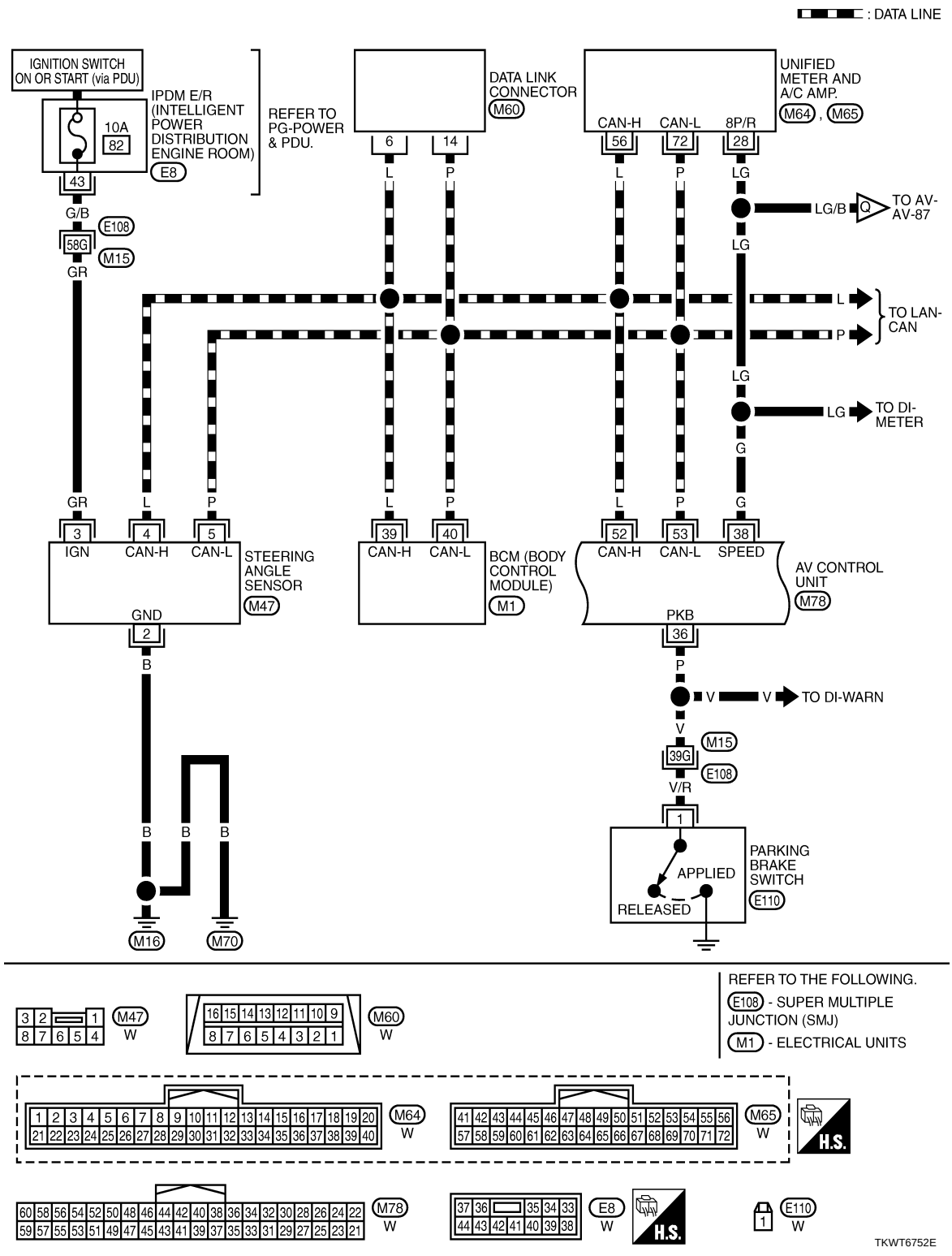




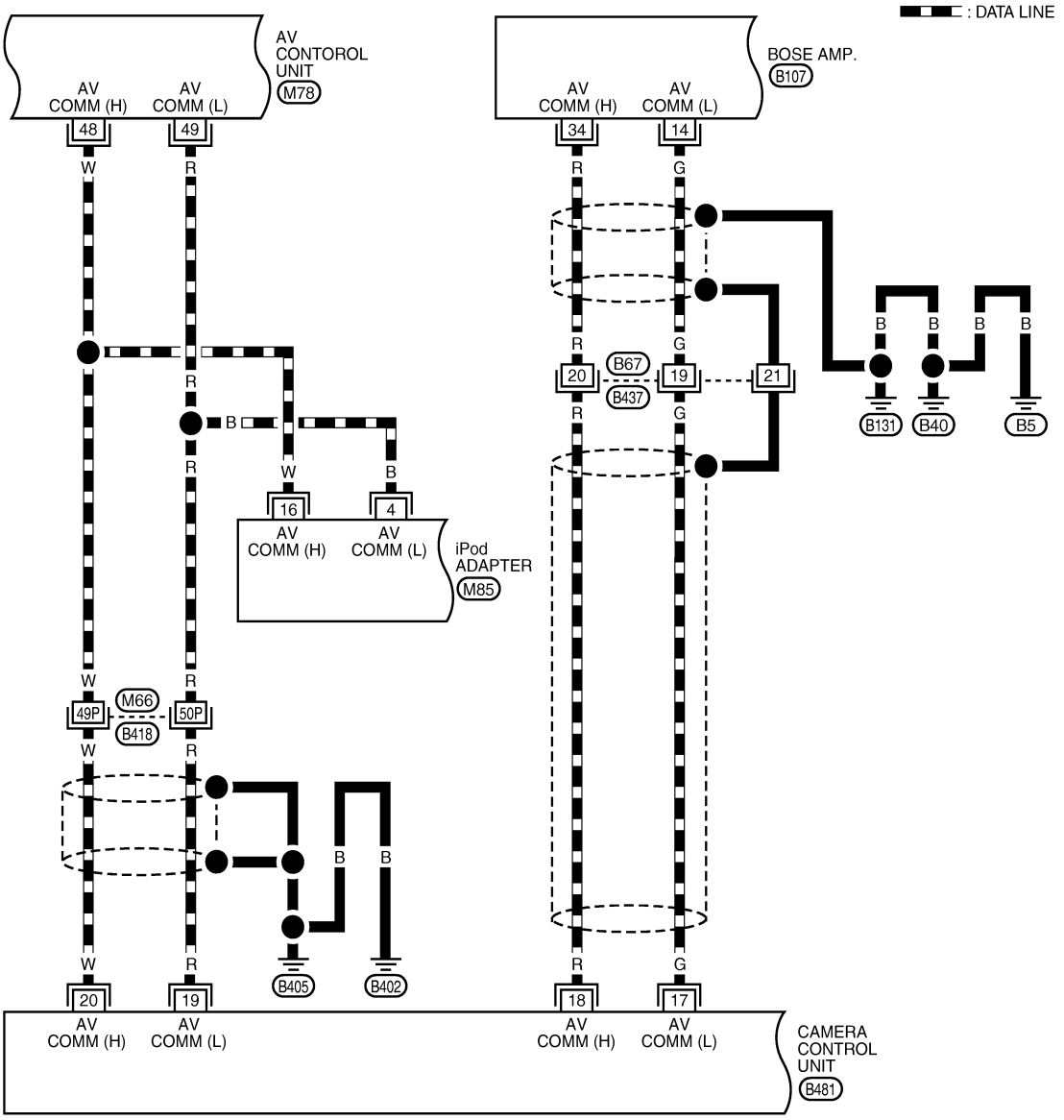
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

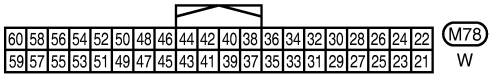
TKWT8306E

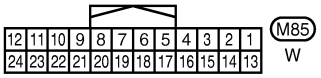
AV-AV-70

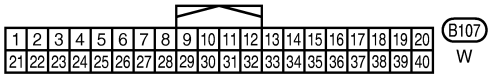

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM)
E8
10A
82
43
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR
M60
6
14
UNIFIED METER AND A/C AMP.
M64, M65
CAN-H
CAN-L
8P/R
56
72
28
G/B
E108
58G
M15
GR
LG/B
Q
TO AV-AV-87
LG
TO LAN-CAN
TO DI-METER
G
3
IGN
4
CAN-H
5
CAN-L
STEERING ANGLE SENSOR
M47
GND
2
B
39
CAN-H
40
CAN-L
BCM (BODY CONTROL MODULE)
M1
52
CAN-H
53
CAN-L
38
SPEED
AV CONTROL UNIT
M78
PKB
36
V
TO DI-WARN
39G
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH
E110
M16
M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47
W
M60
W
M64
W
M65
W
H.S.
M78
W
E8
W
E110
W
TKWT6752E

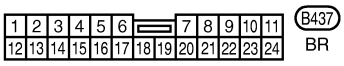
AV-AV-71

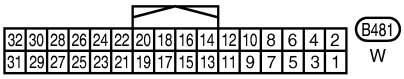








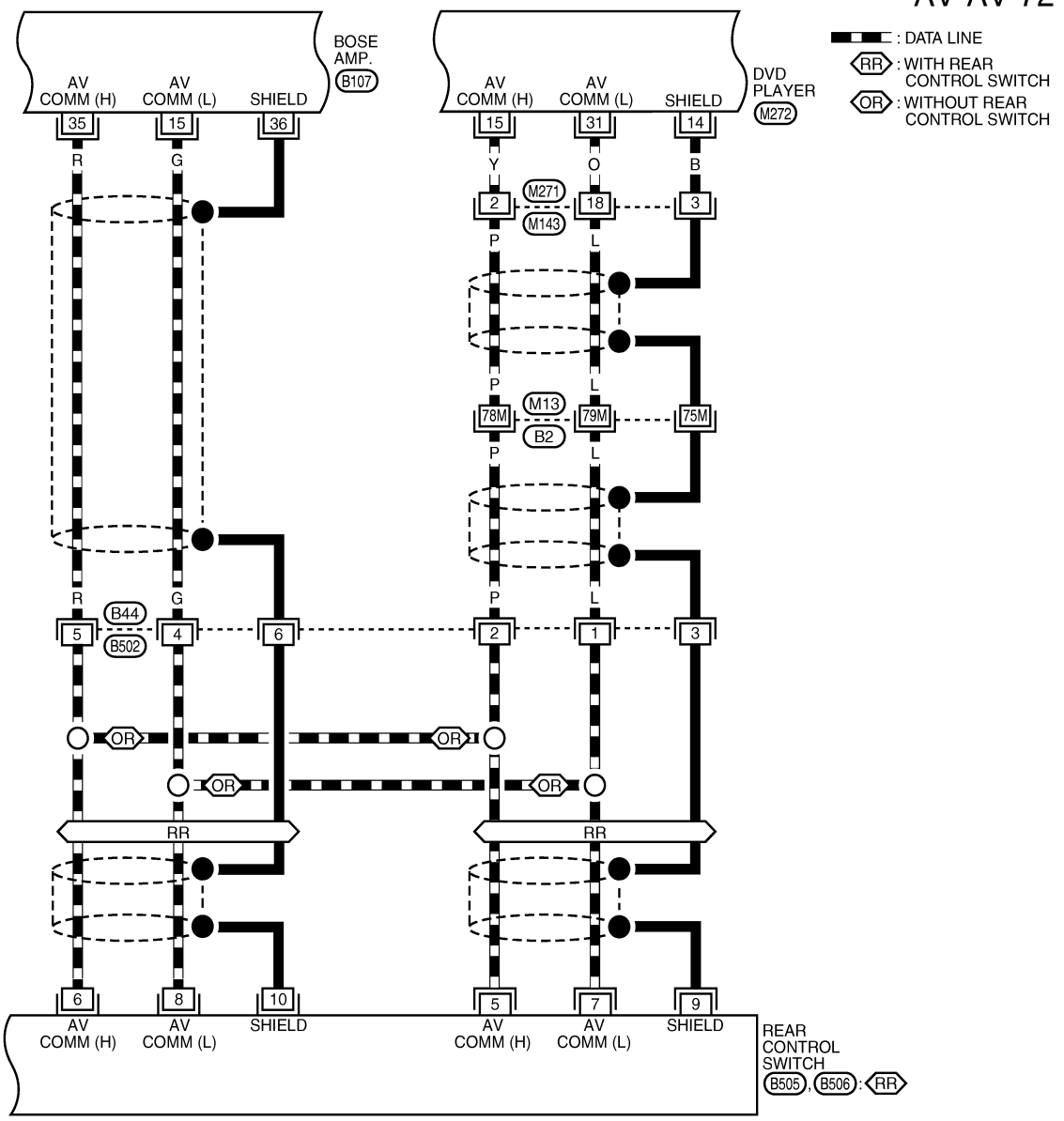


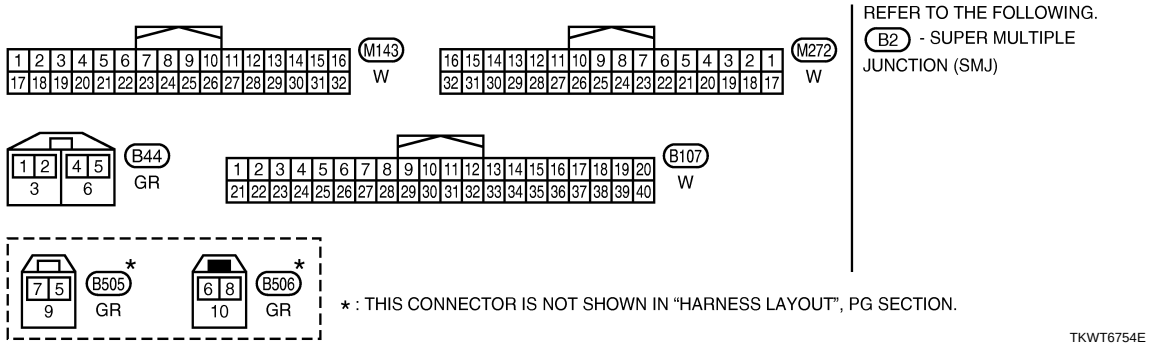


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6753E

AV-AV-72

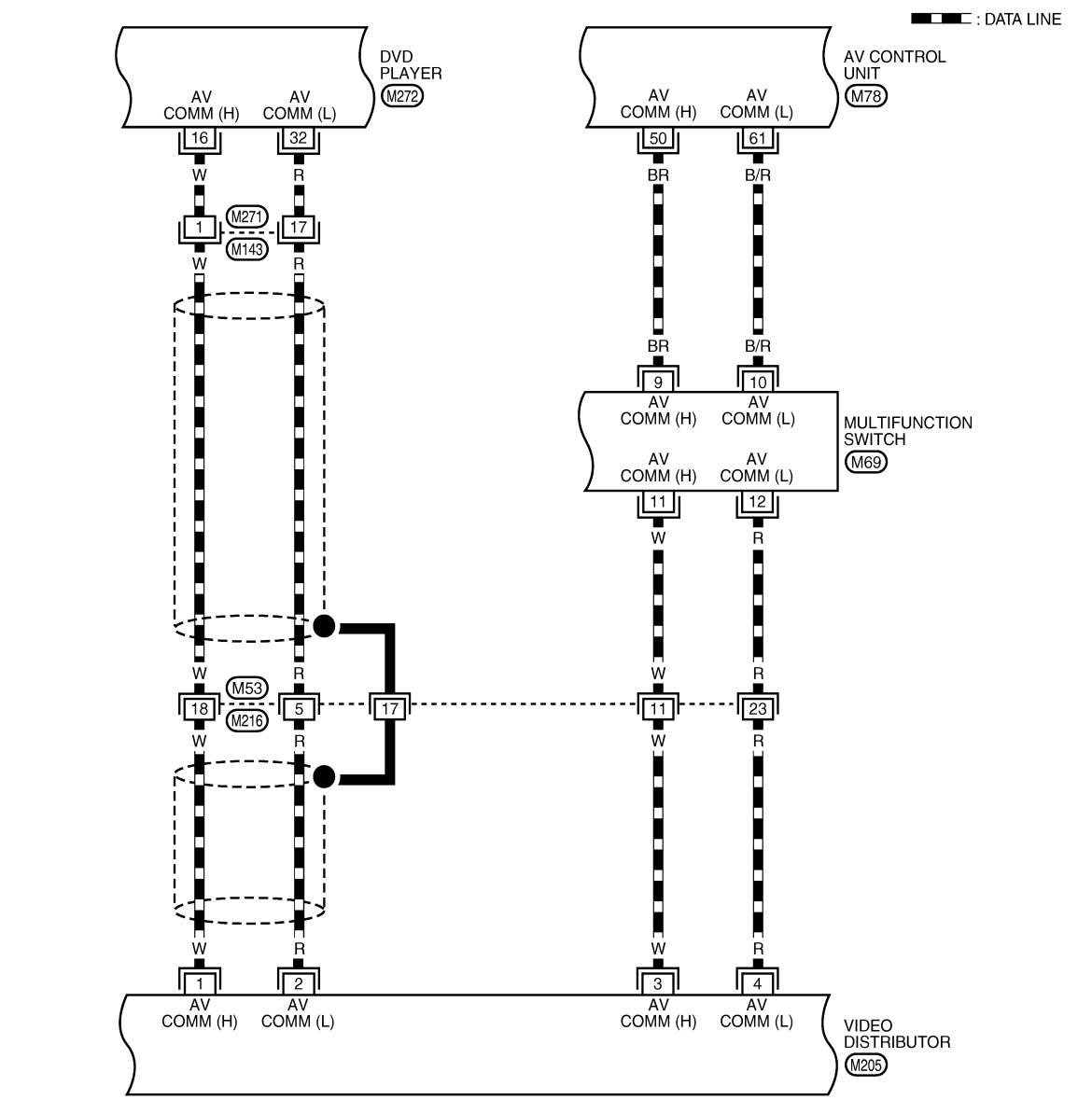


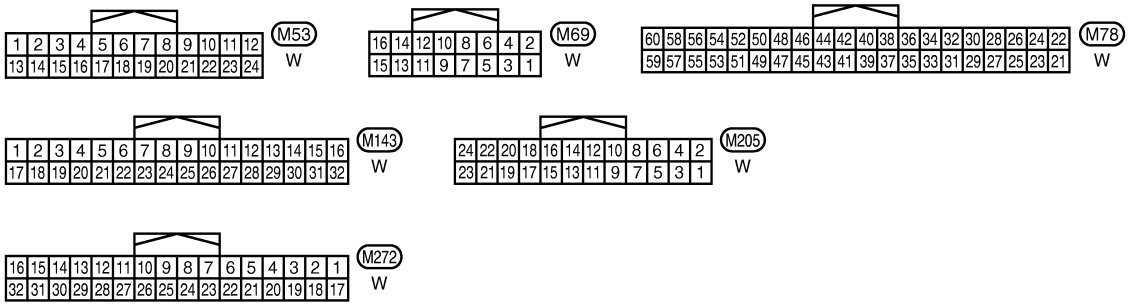


* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.

TKWT6754E

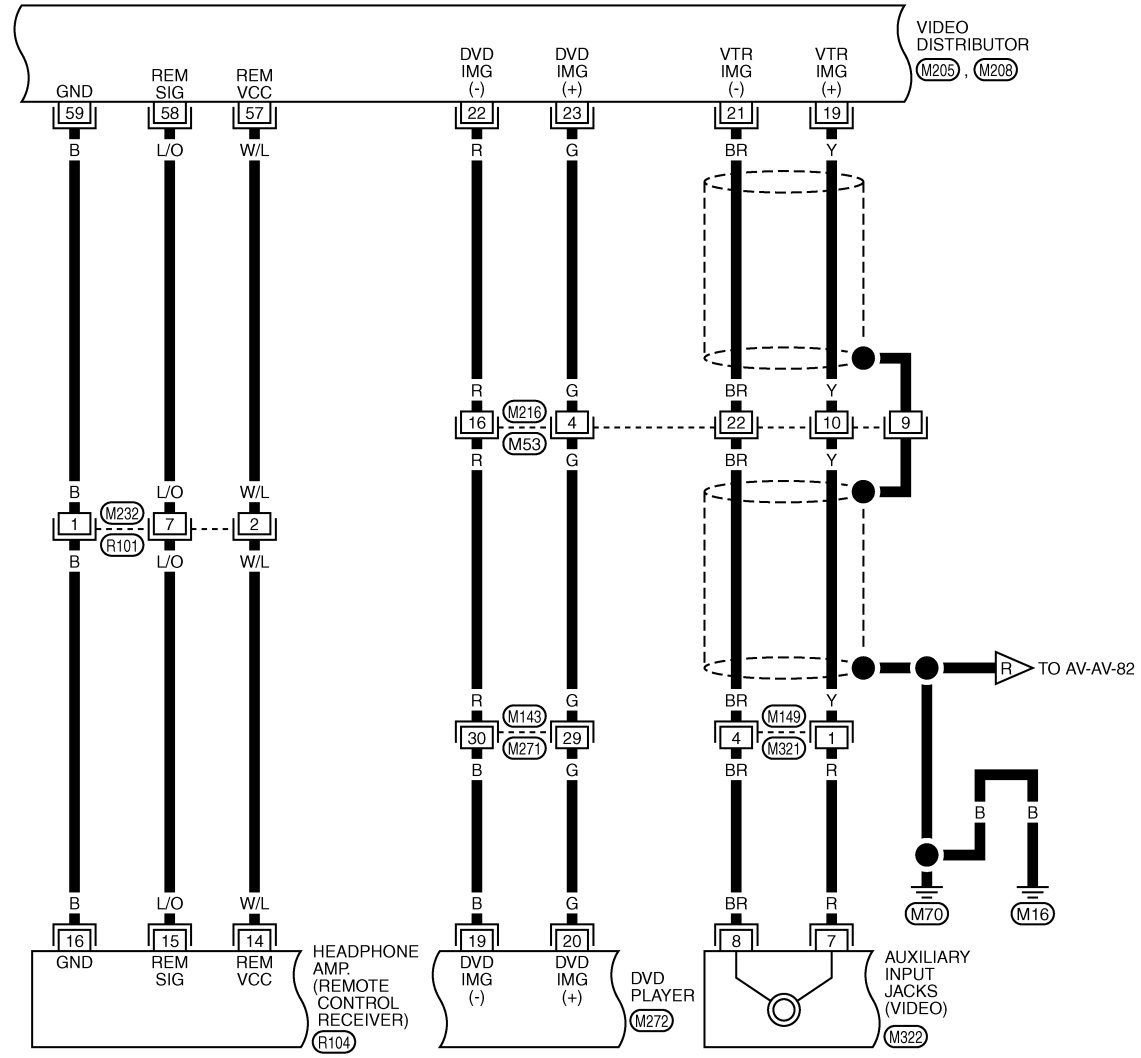
AV-AV-73

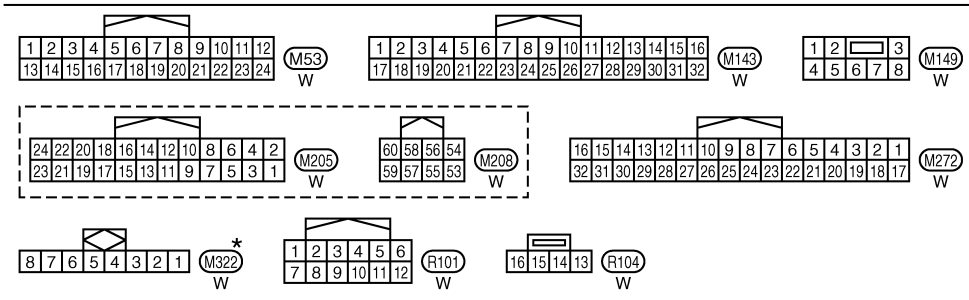




TKWT6755E

AV-AV-74

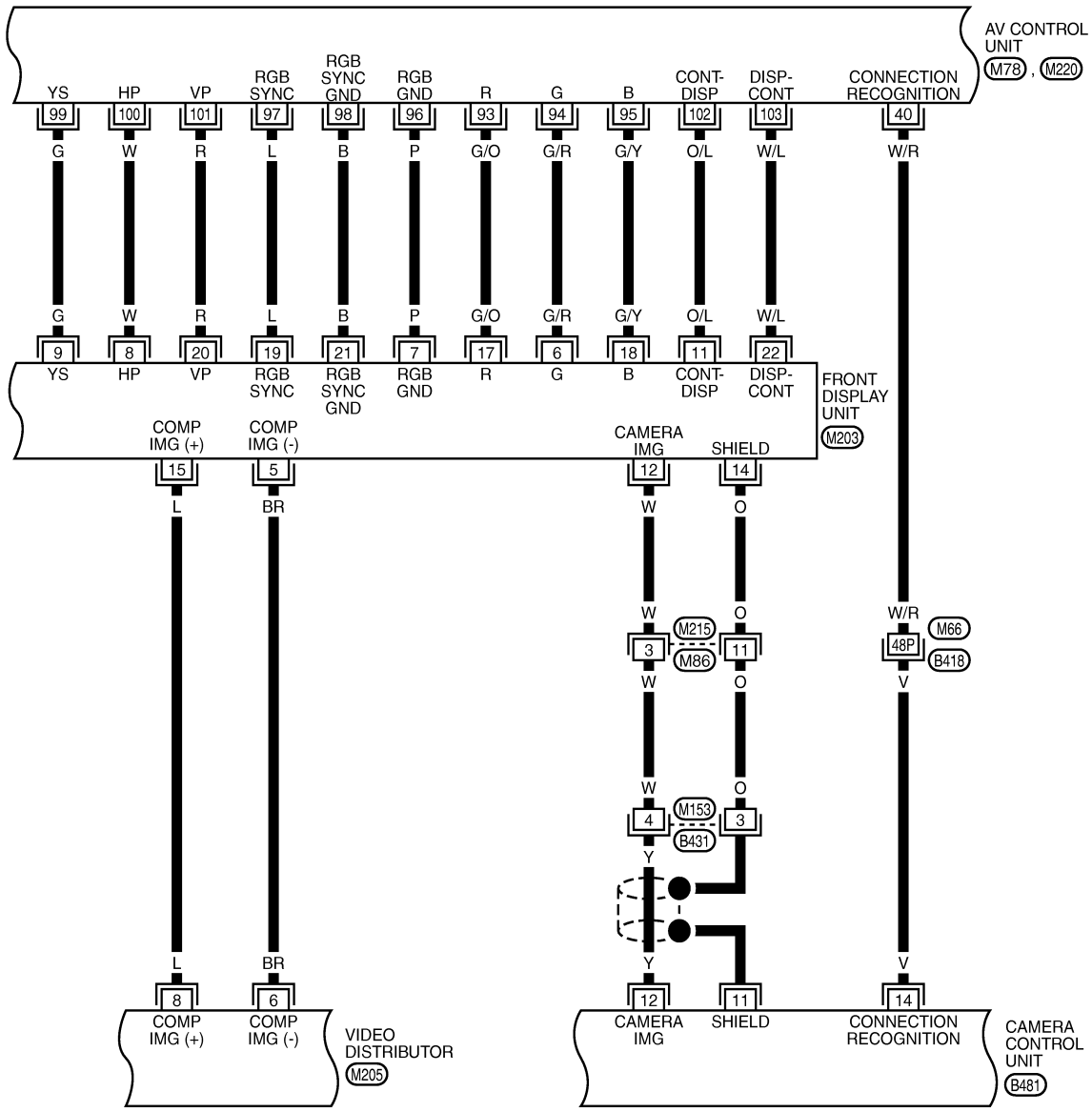


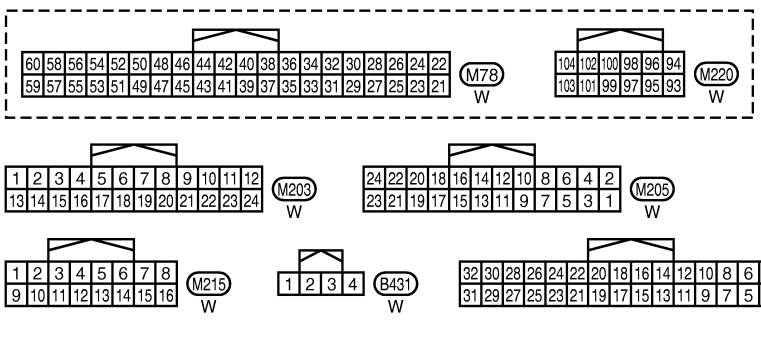


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8307E

AV-AV-75

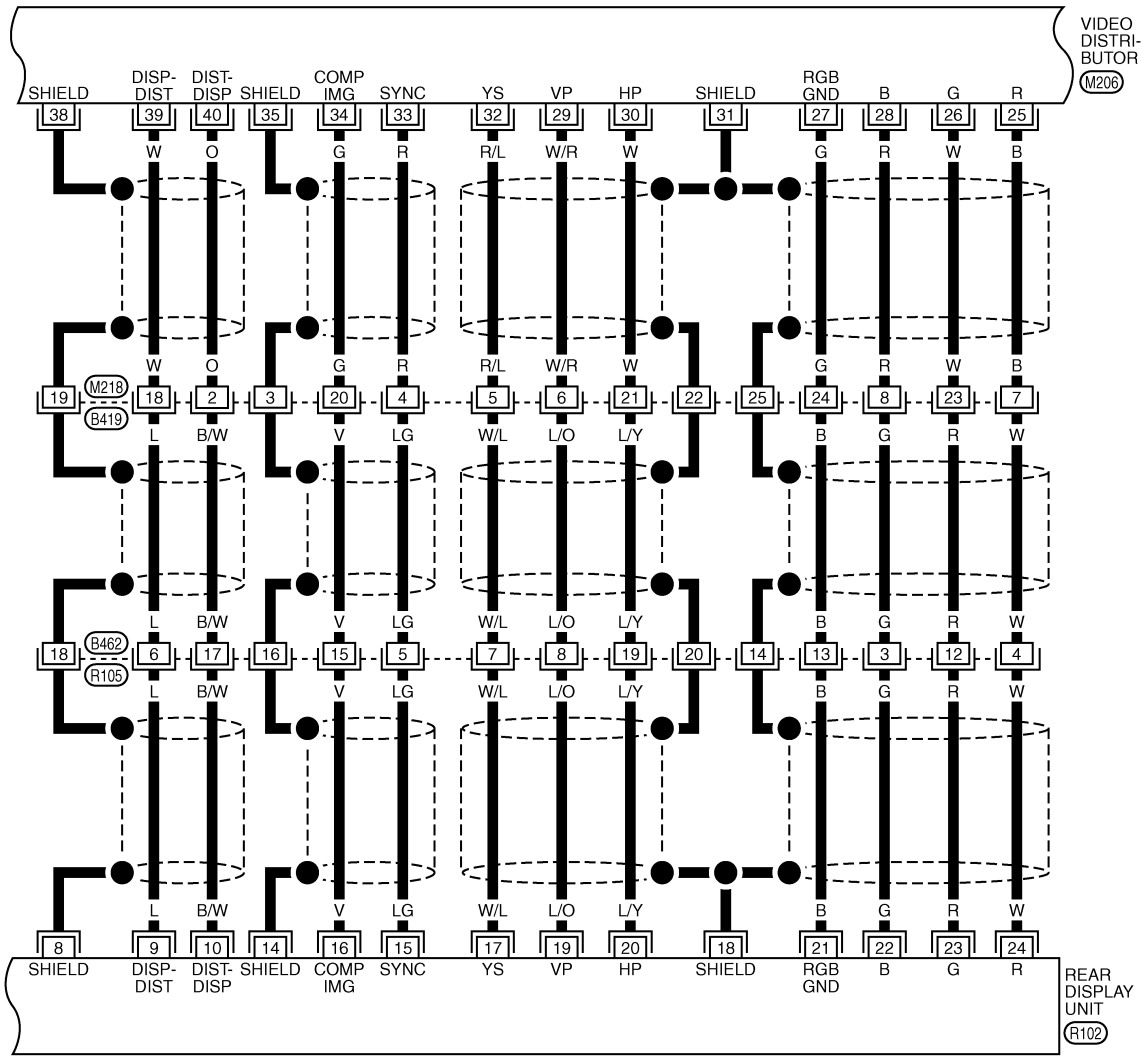


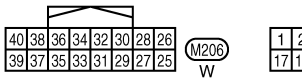


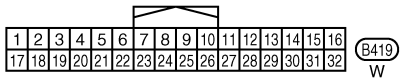
REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

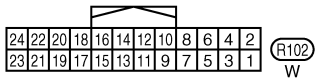
TKWT6757E

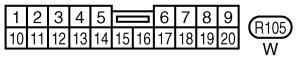
AV-AV-76





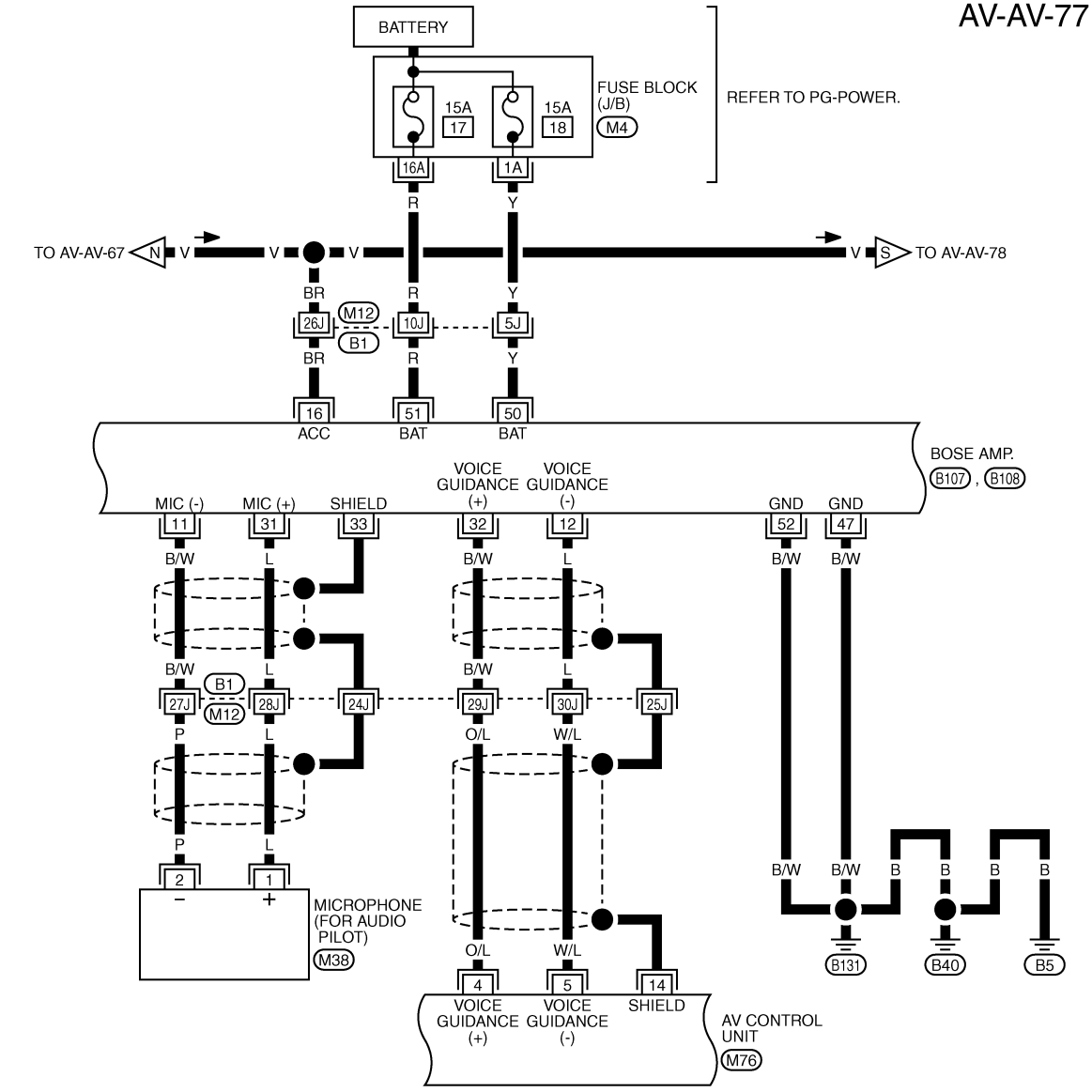


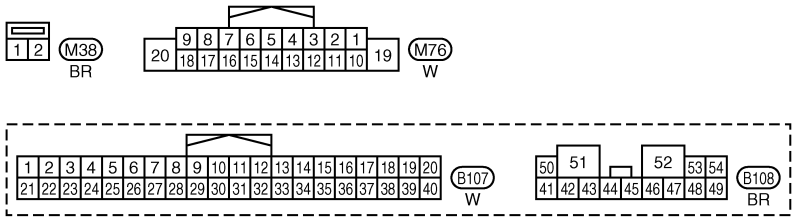




TKWT5152E

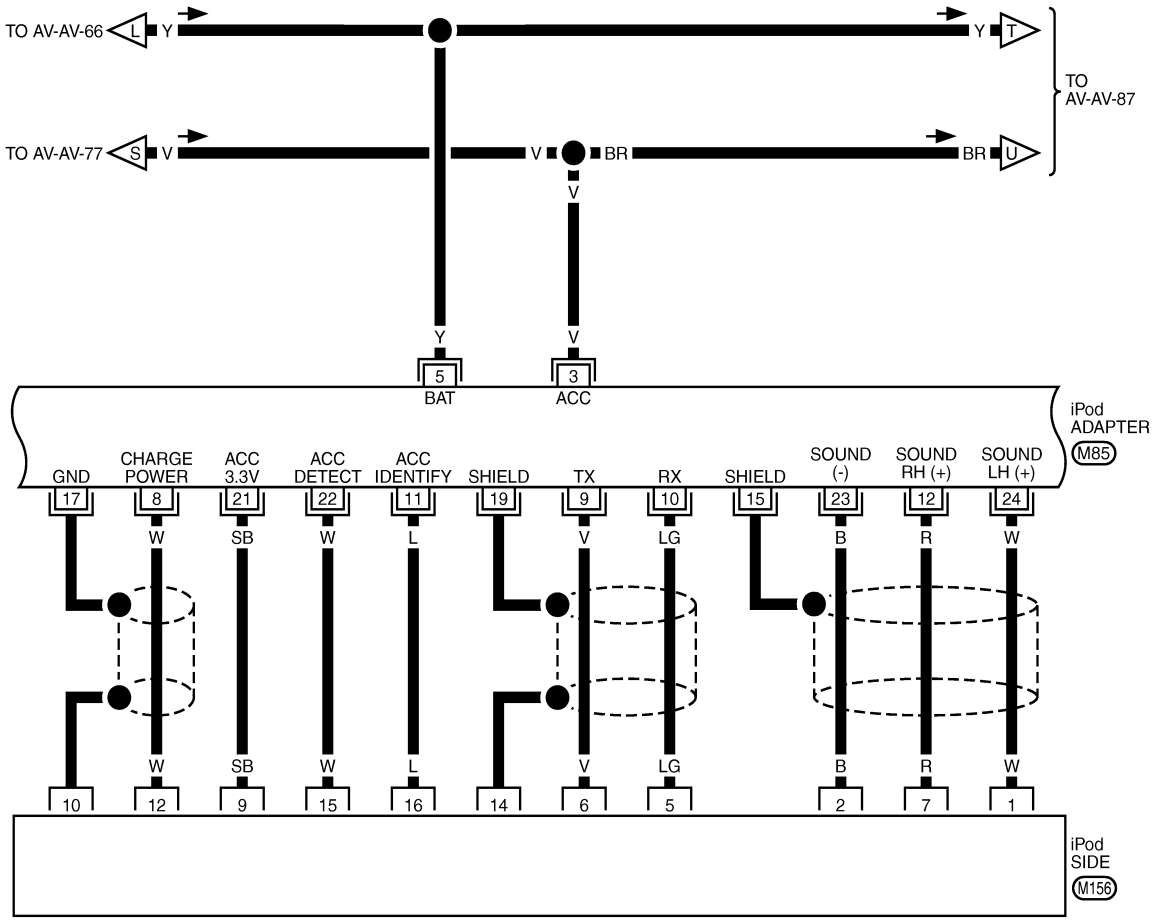
AV-AV-77

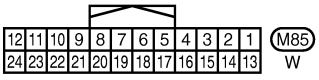


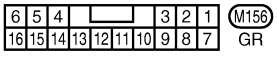


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8308E

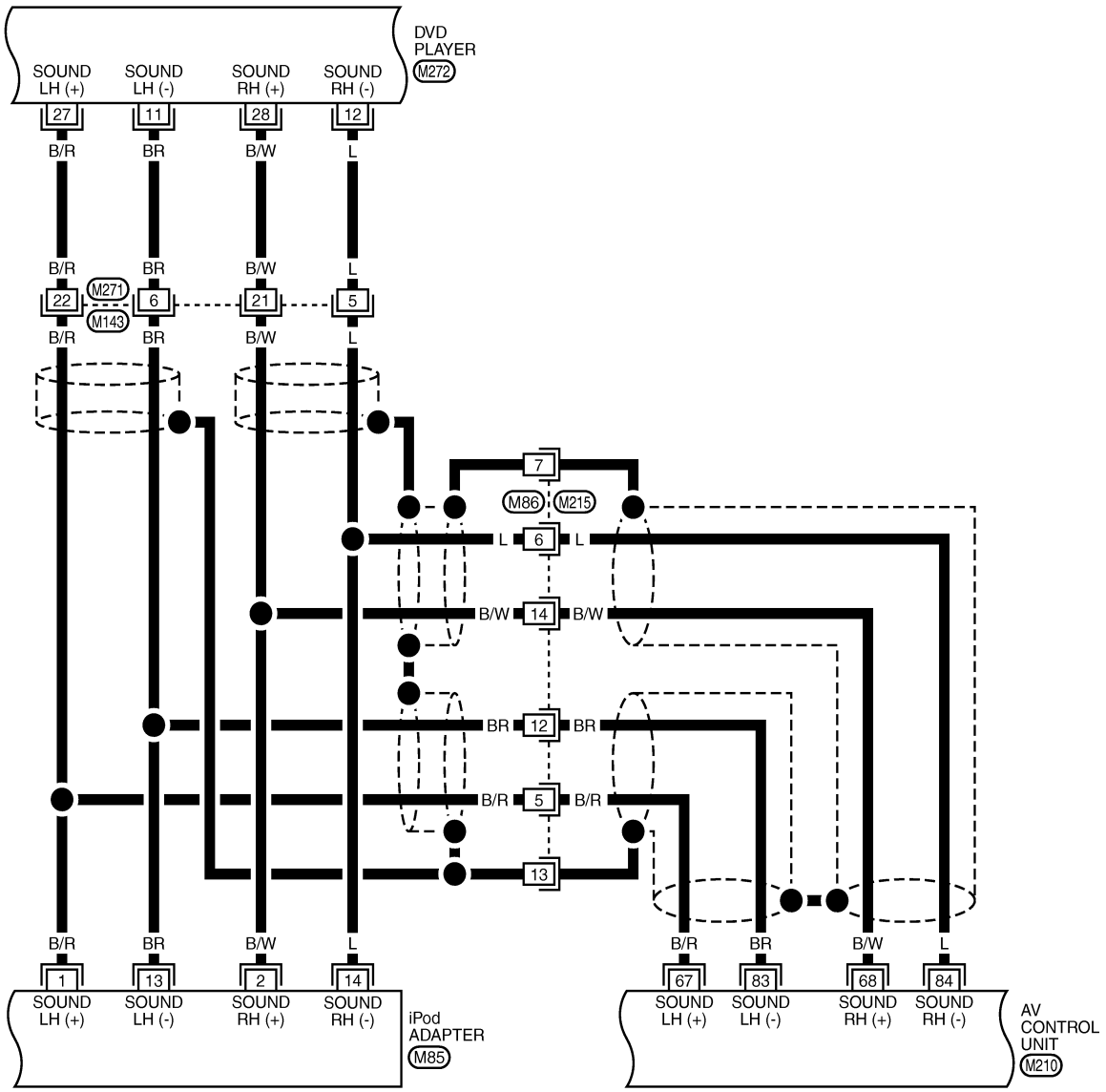

TO AV-AV-66
L
Y
Y
T
TO AV-AV-87
TO AV-AV-77
S
V
V
BR
BR
U
V
Y
V
5
BAT
3
ACC
iPod ADAPTER
M85
GND
CHARGE POWER
ACC 3.3V
ACC DETECT
ACC IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND (-)
SOUND RH (+)
SOUND LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod SIDE
M156

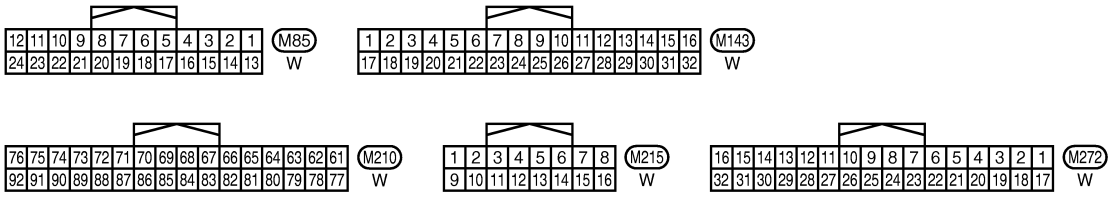

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6761E

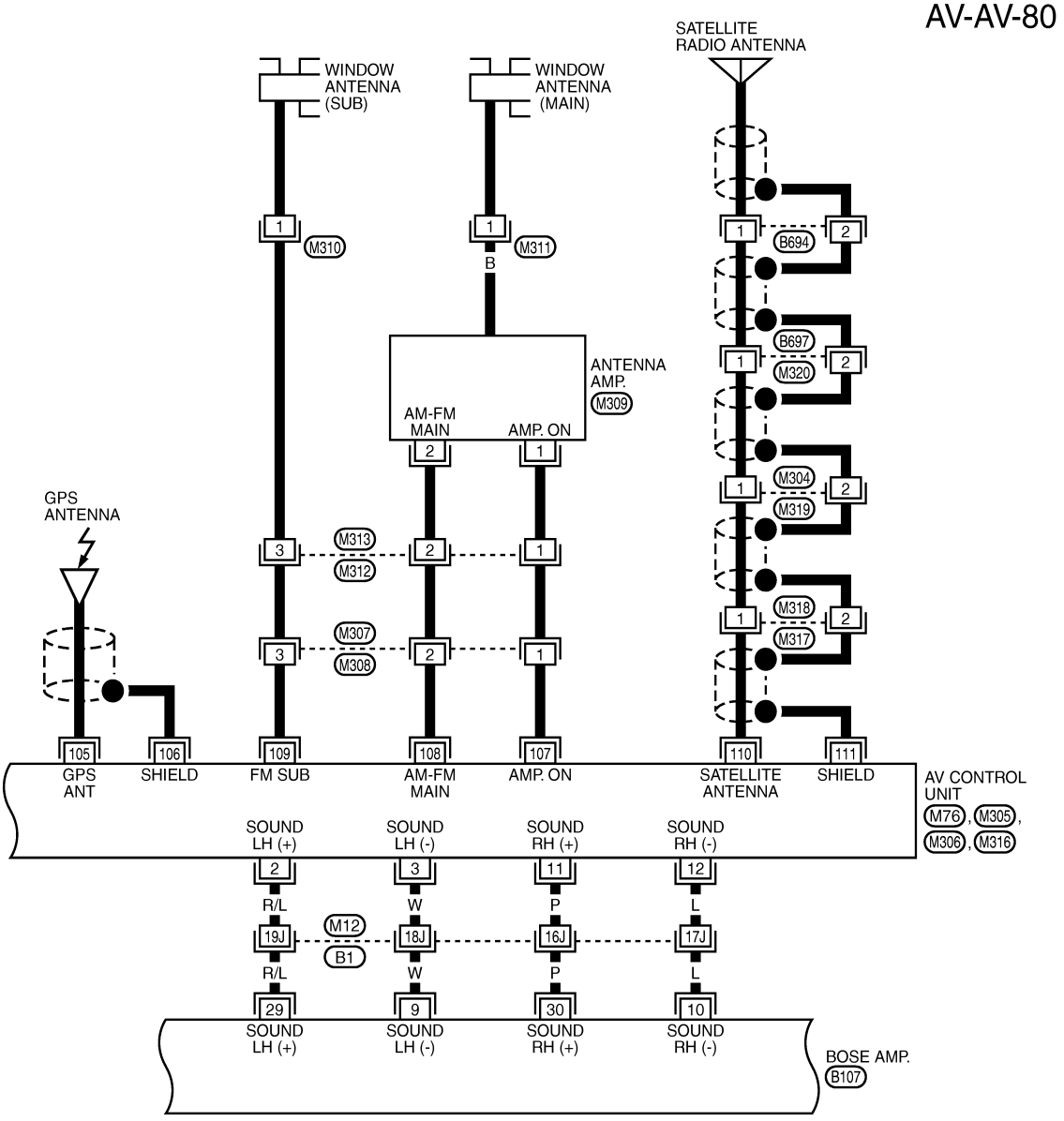
AV-AV-79

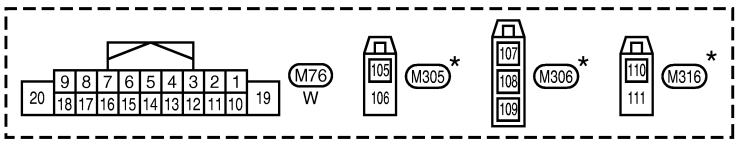




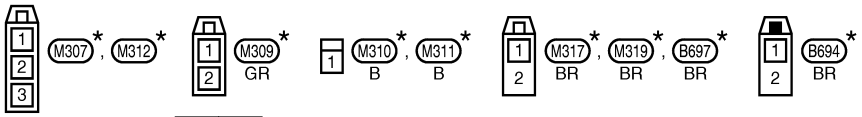
TKWT6762E

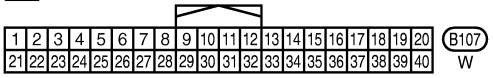
AV-AV-80





REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

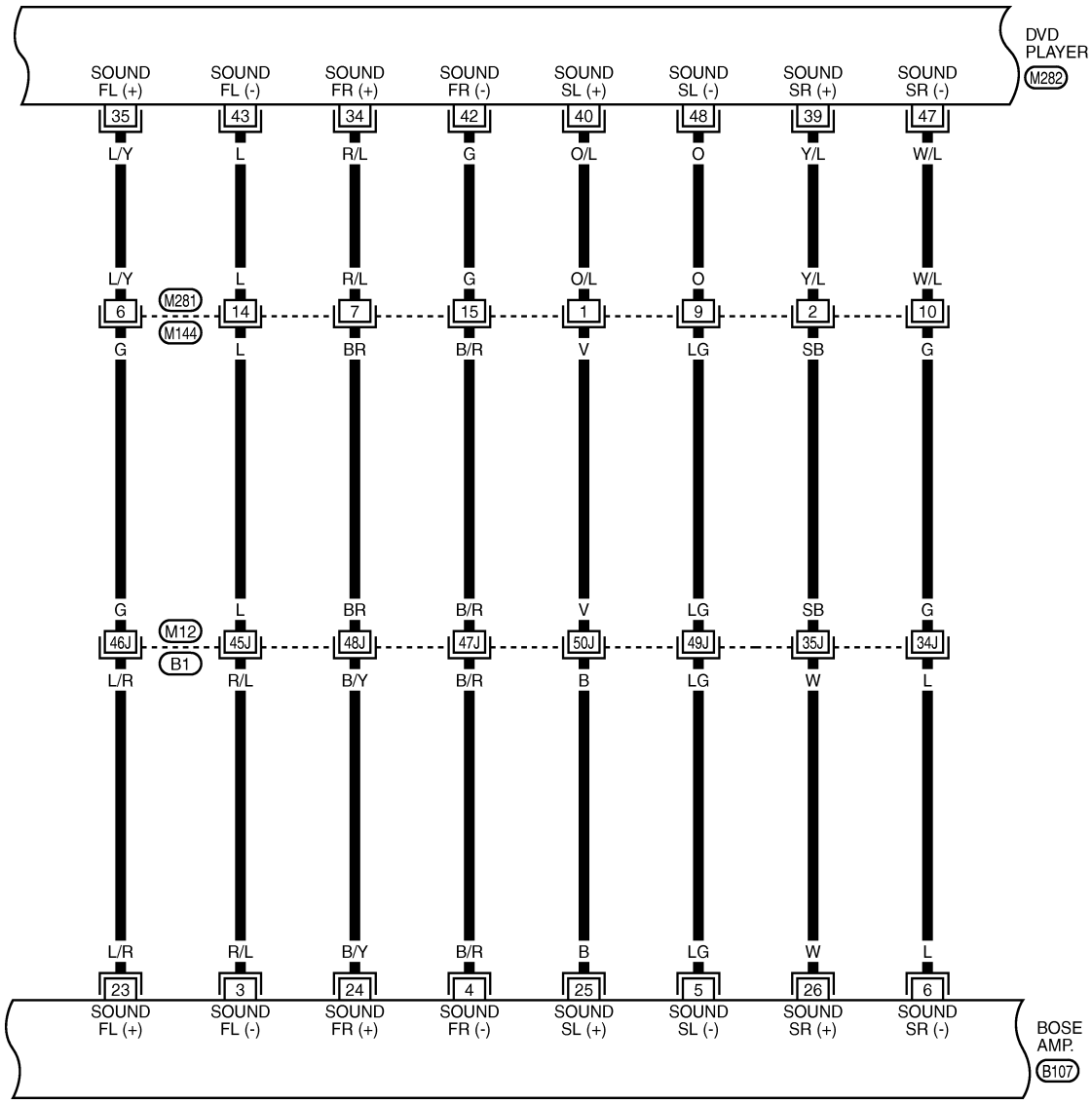


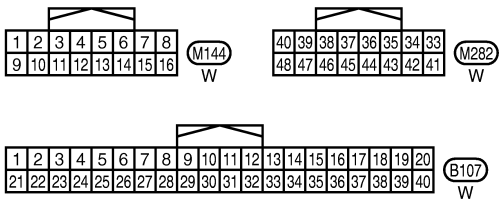


★ : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6763E

AV-AV-81

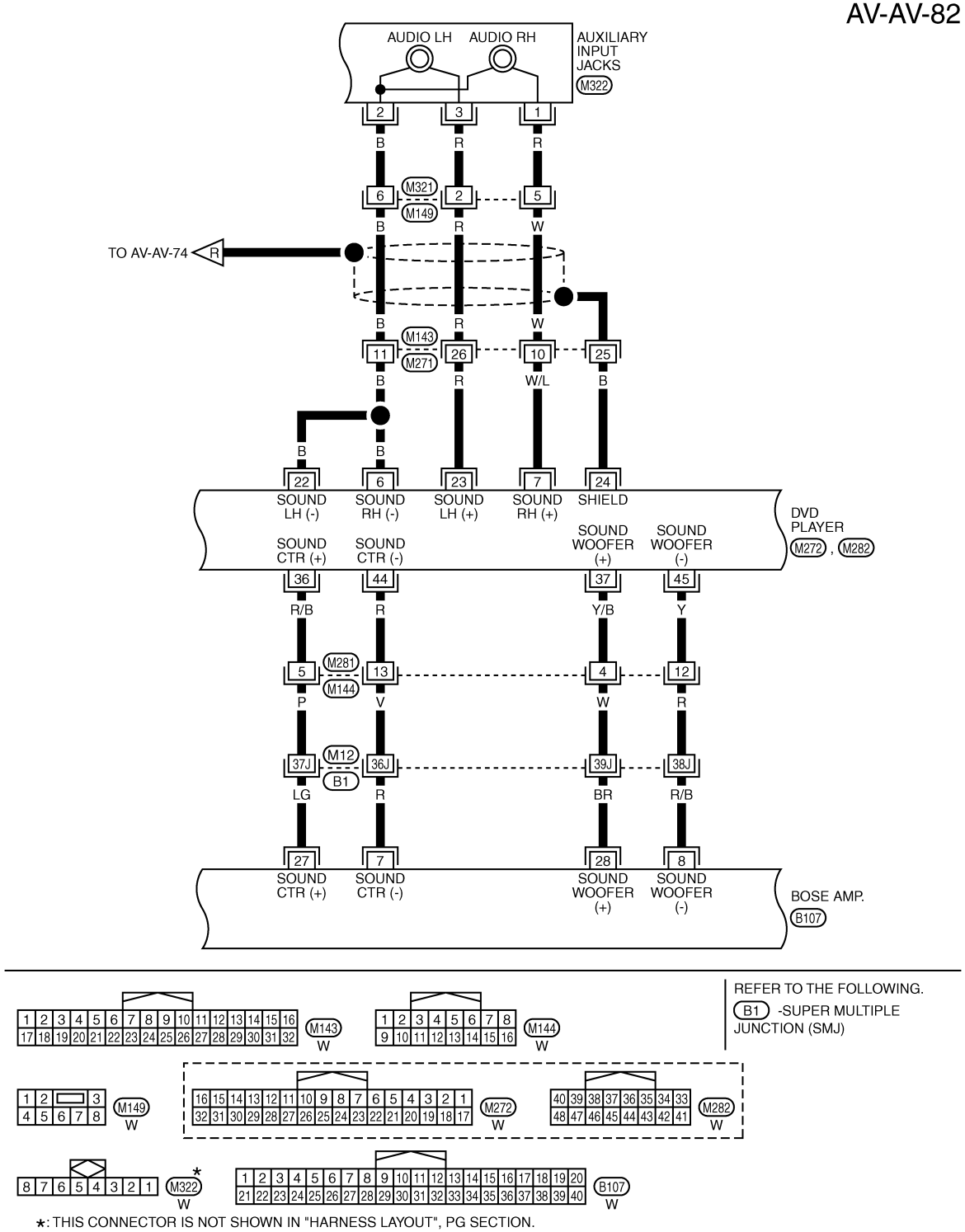




REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

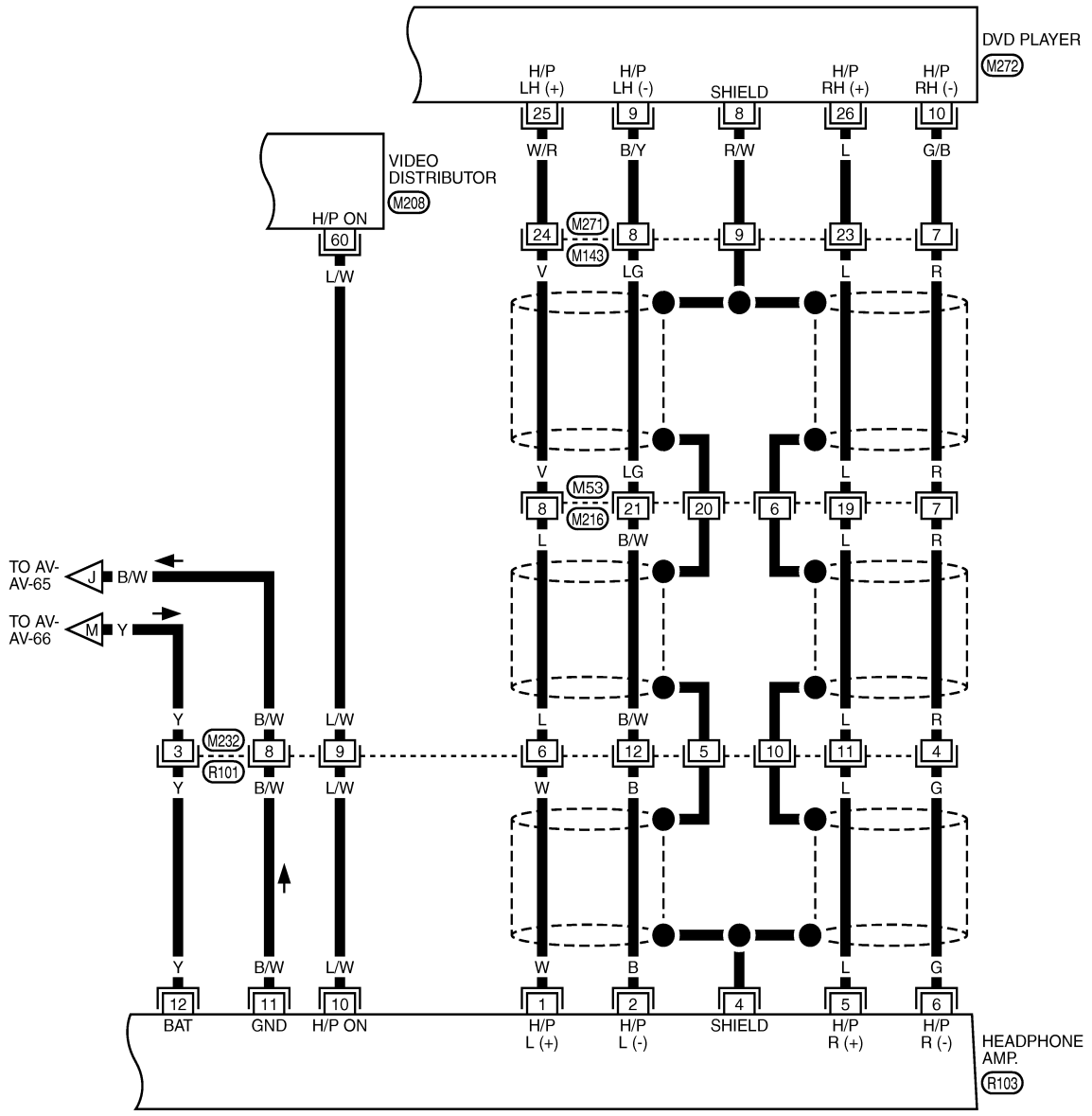
TKWT6764E

AV-AV-82



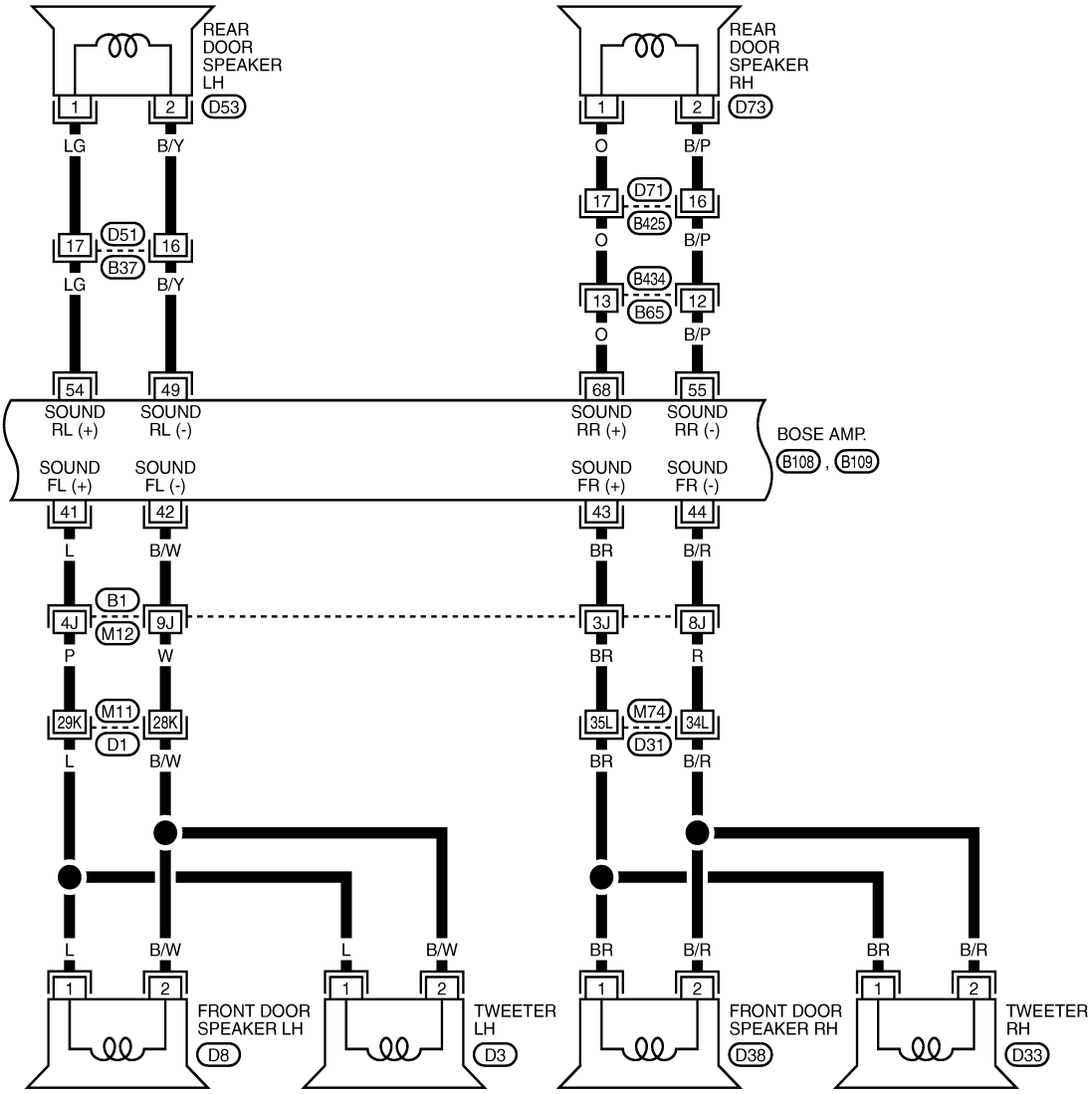
TKWT8309E

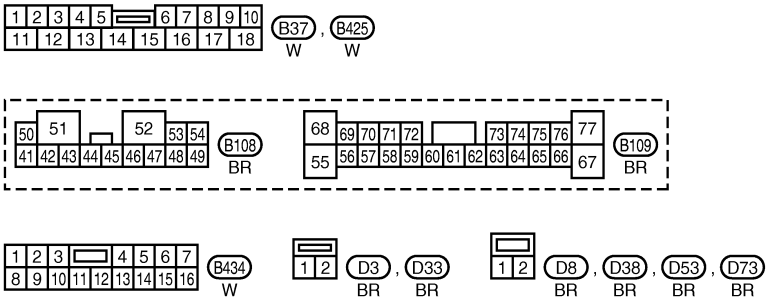
AV-AV-83



TKWT6766E

AV-AV-84

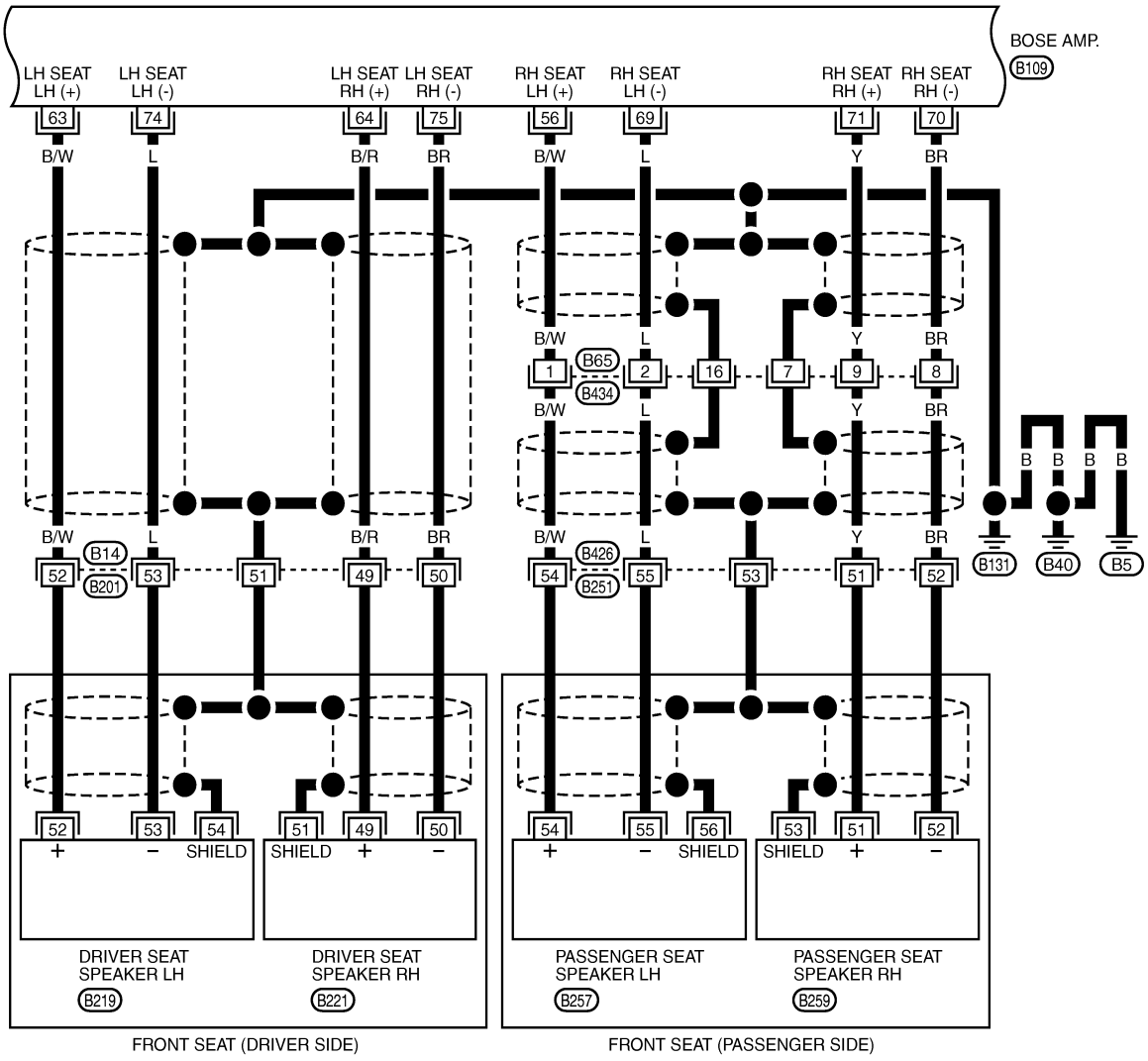


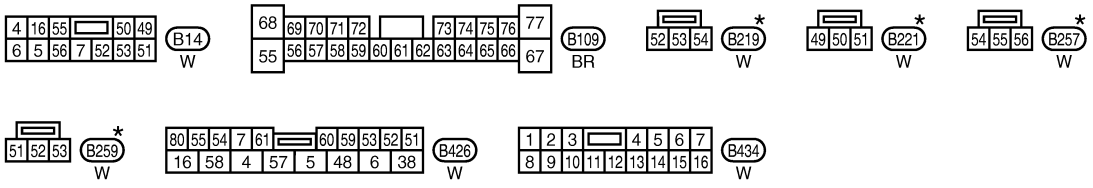


REFER TO THE FOLLOWING.
B1 , D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6767E

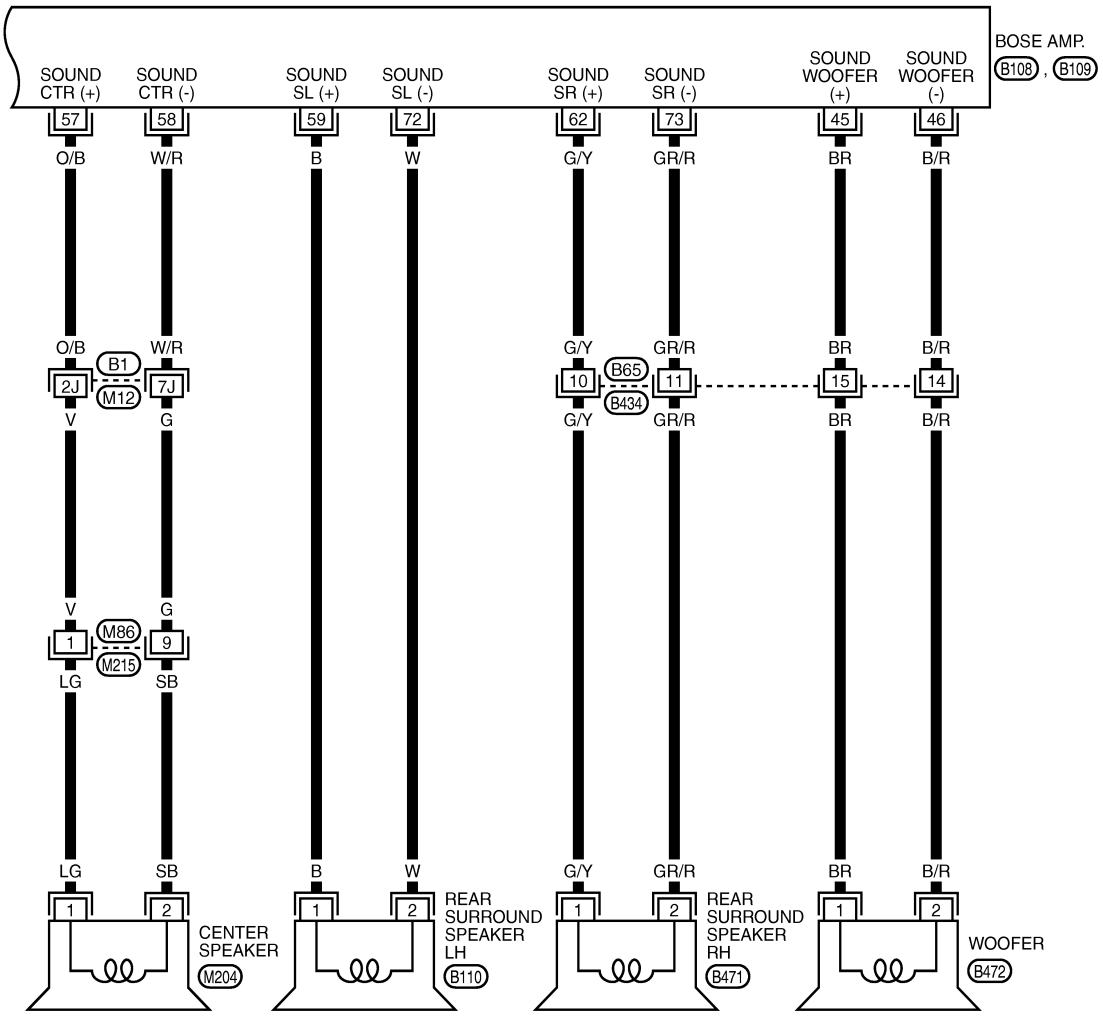
AV-AV-85

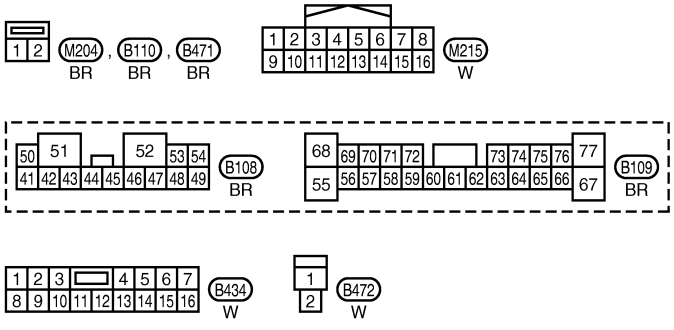




*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6768E

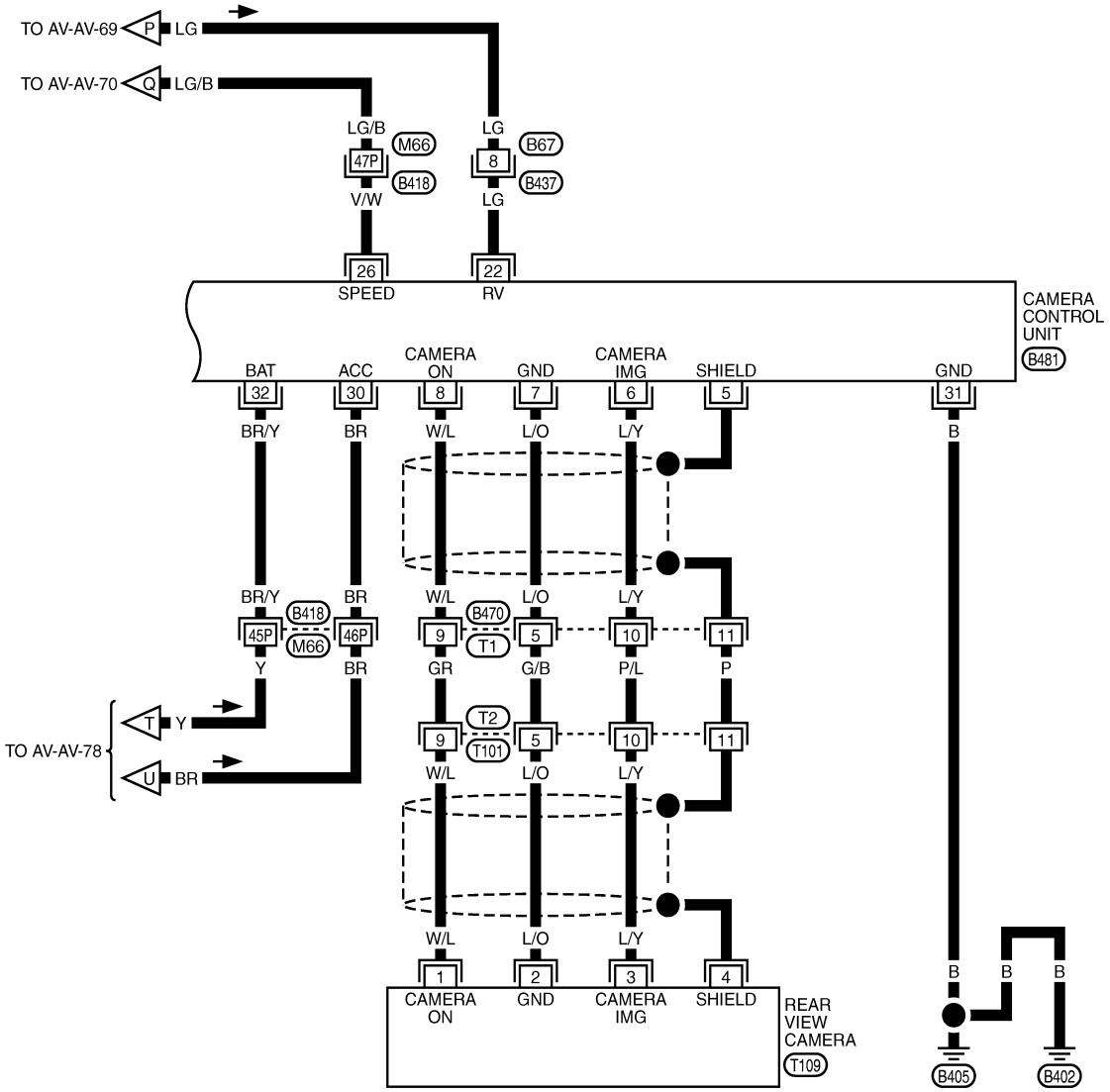




REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6769E

AV-AV-87



REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

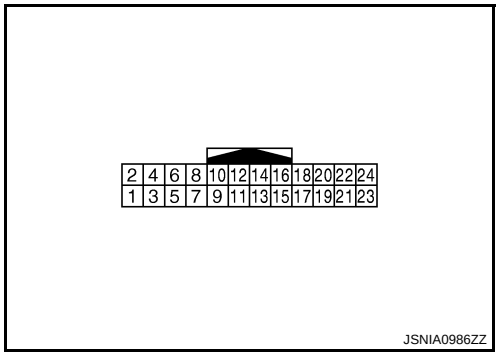
TKWT6770E

REAR DISPLAY UNIT

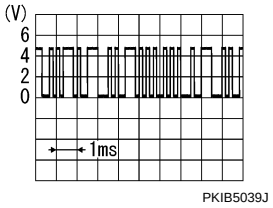
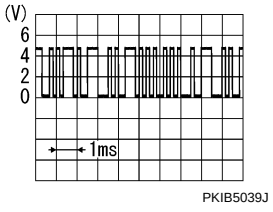
Reference Value

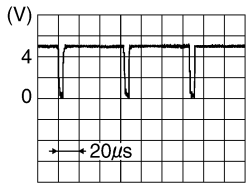
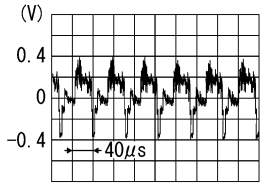
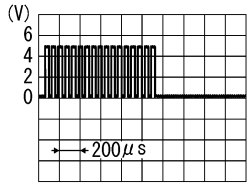
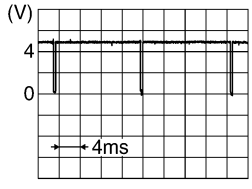
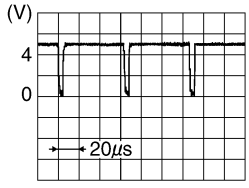
INFOID:0000000004156080

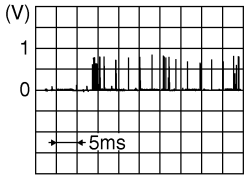
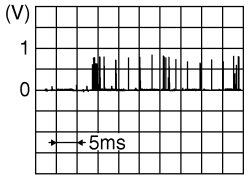
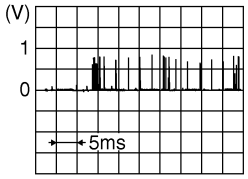
TERMINAL LAYOUT



PHYSICAL VALUES

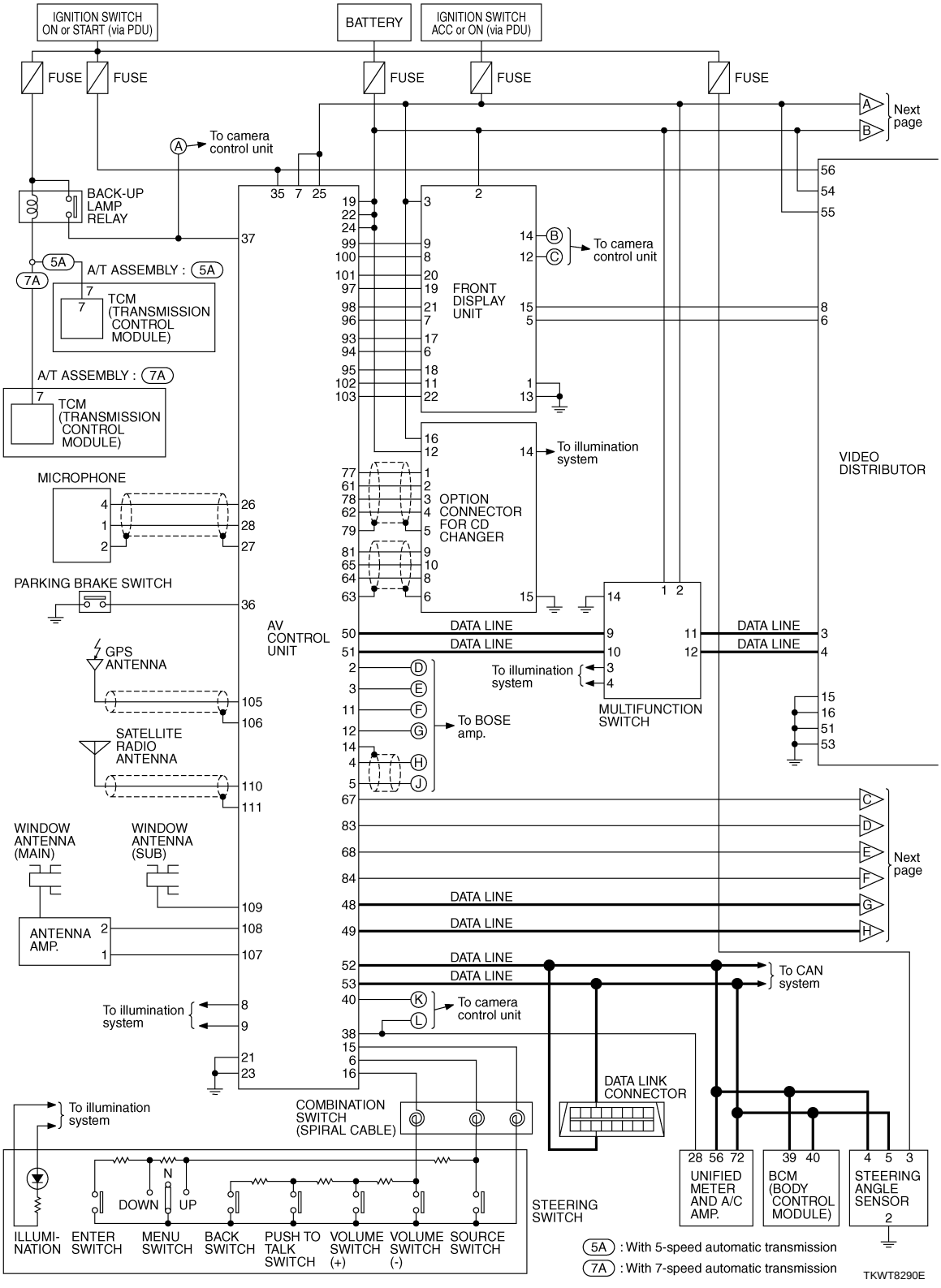
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B/Y)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (B/Y)	Ground	Ground	—	Ignition switch ON	—	0 V
3 (L/O)	Ground	Battery power supply	Input	Ignition switch ON	—	Battery voltage
4 (L/Y)	Ground	Battery power supply	Input	Ignition switch ON	—	Battery voltage
6 (W/L)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
8	—	Shield	—	—	—	—
9 (L)	Ground	Communication signal (DISP→DIST)	Output	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear displayed.	 PKIB5039J
10 (B/W)	Ground	Communication signal (DIST→DISP)	Input	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear displayed.	 PKIB5039J

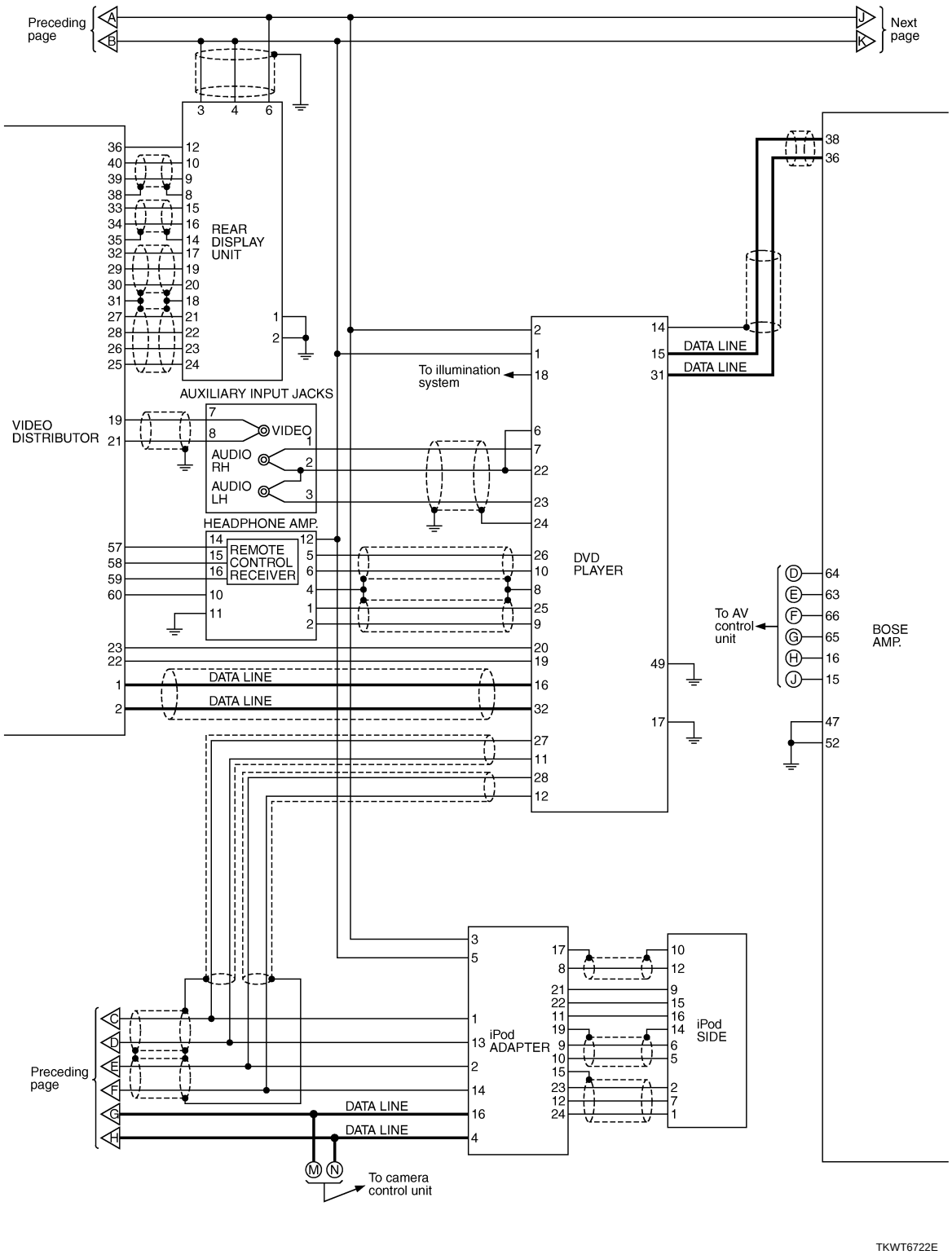
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
12 (L/W)	Ground	Ignition signal	Input	Ignition switch ON	—	0 V
				Ignition switch ACC	—	5 V
14	—	Shield	—	—	—	—
15 (LG)	Ground	Composite image synchronizing signal	Input	Ignition switch ON	When AUX or DVD image is displayed on rear display unit.	 SKIB0825E
16 (V)	Ground	Composite image signal	Input	Ignition switch ON	When AUX or DVD image is displayed on rear display unit.	 SKIB2251J
17 (W/L)	Ground	RGB area (YS) signal	Input	Ignition switch ON	When AUX or DVD image is displayed.	0 V
					Rear seat remote controller operation when AUX or DVD image is displayed on rear display.	 PKIB4948J
18	—	Shield	—	—	—	—
19 (L/O)	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch ON	—	 SKIB3598E
20 (L/Y)	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON	—	 SKIB0825E
21 (B)	Ground	RGB ground	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
22 (G)	Ground	RGB signal (B: blue) for rear display unit	Input	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA0984ZZ
23 (R)	Ground	RGB signal (G: green)	Input	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA0984ZZ
24 (W)	Ground	RGB signal (R: red)	Input	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA0984ZZ

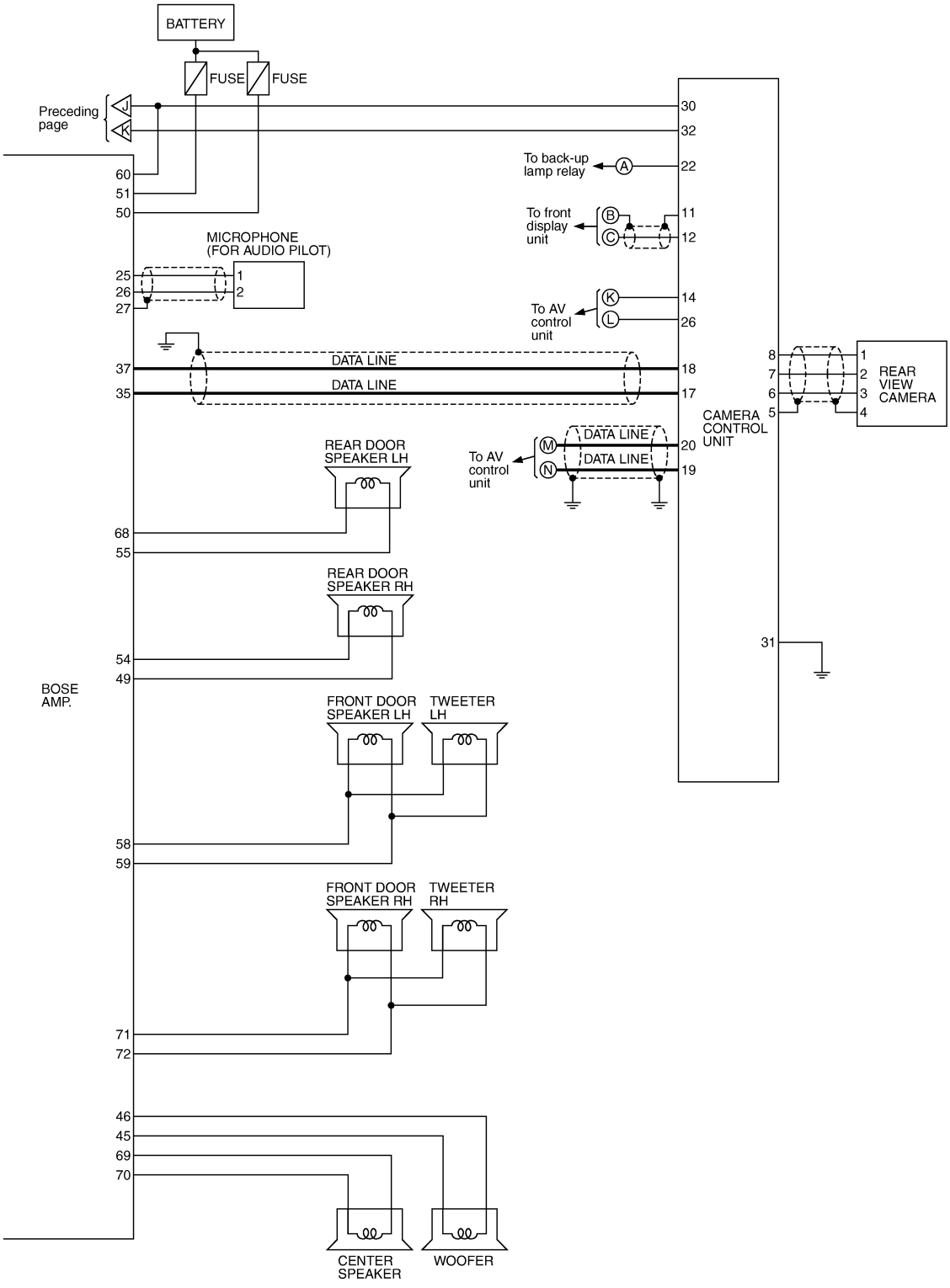
Schematic - BOSE Audio 2ch System-

INFOID:0000000004391598




Preceding page
Next page
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO
AUDIO RH
AUDIO LH
VIDEO DISTRIBUTOR
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
To illumination system
DVD PLAYER
DATA LINE
DATA LINE
DATA LINE
DATA LINE
To AV control unit
BOSE AMP.
iPod ADAPTER
iPod SIDE
Preceding page
DATA LINE
DATA LINE
To camera control unit

TKWT6722E



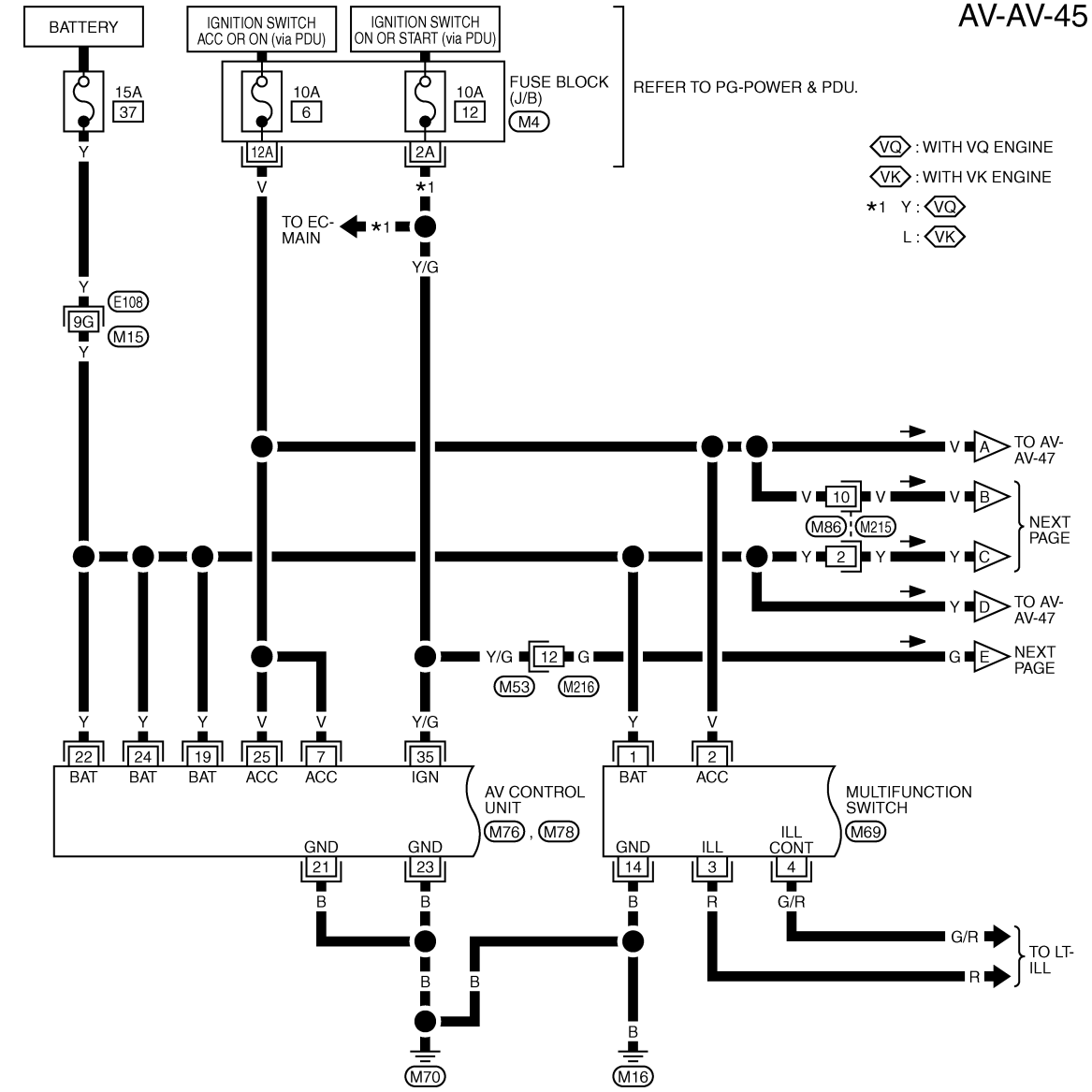
TKWT6723E

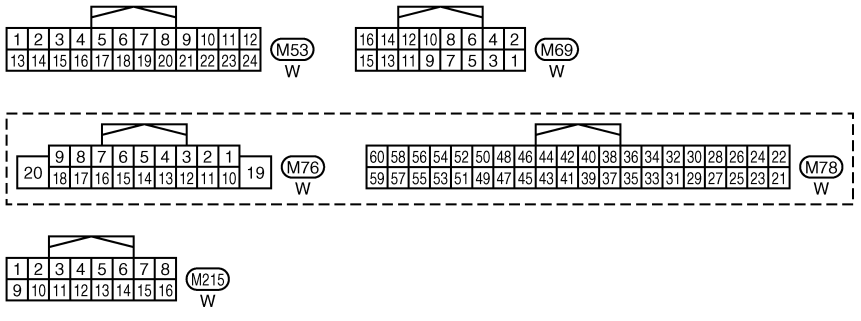
Wiring Diagram - AV - / BOSE Audio 2ch System

INFOID:0000000004391599

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

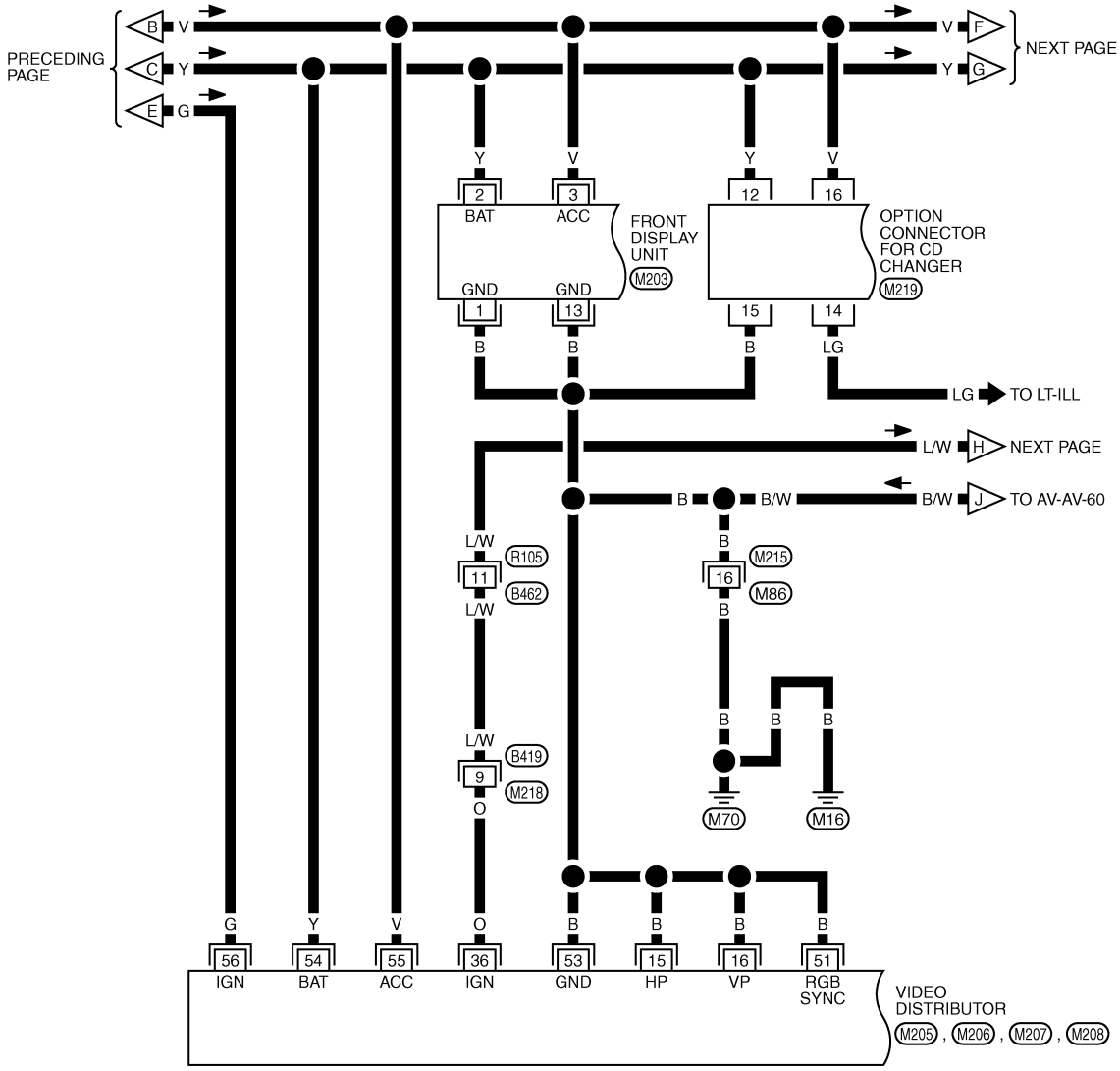


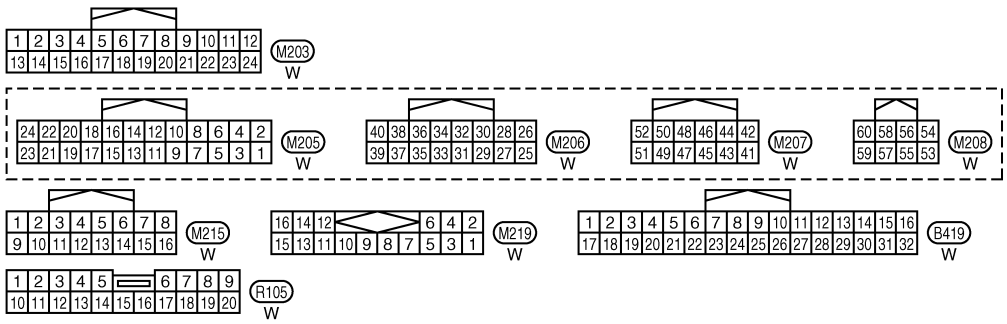


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8291E

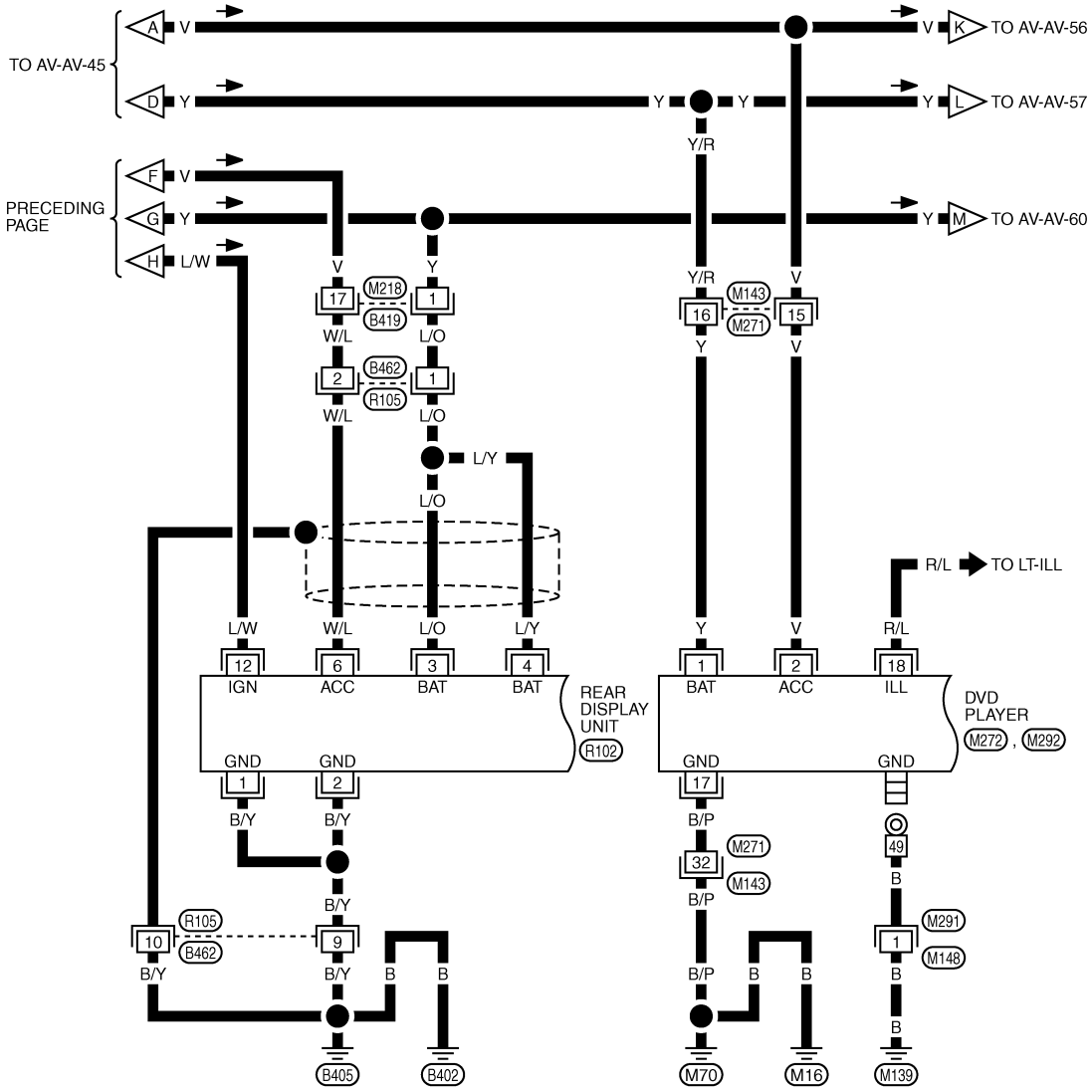
AV-AV-46

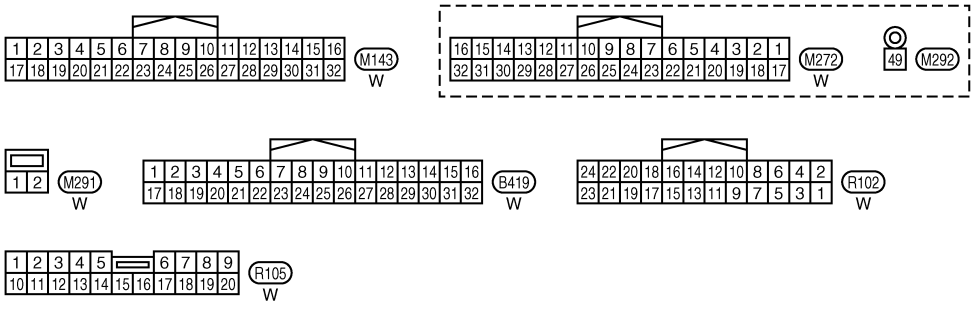




TKWT8292E

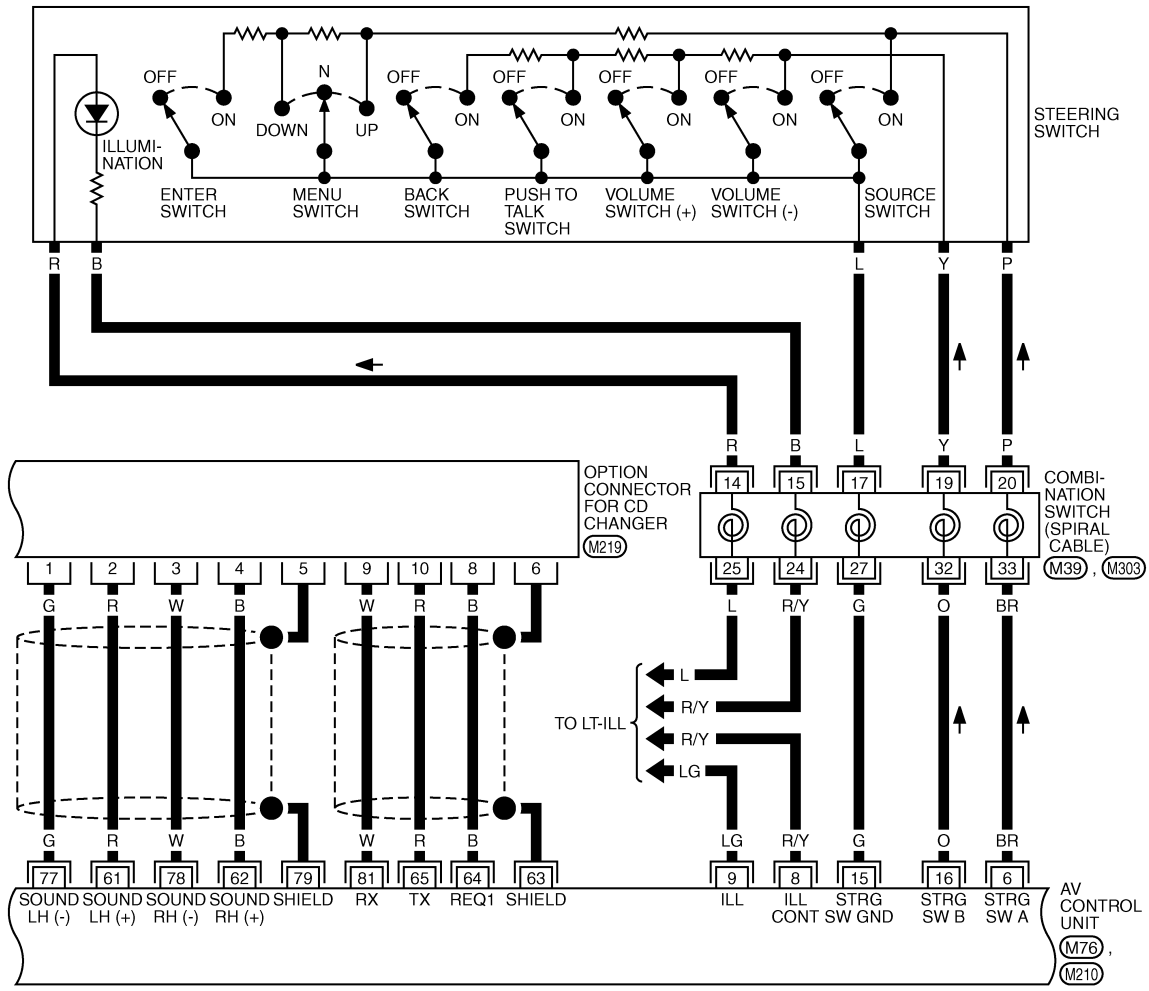
AV-AV-47

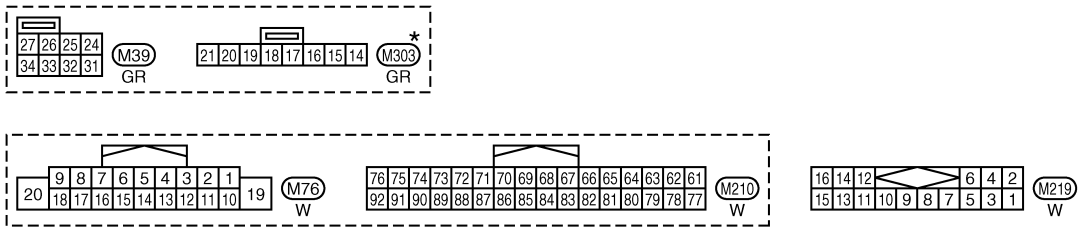




TKWT8293E

AV-AV-48

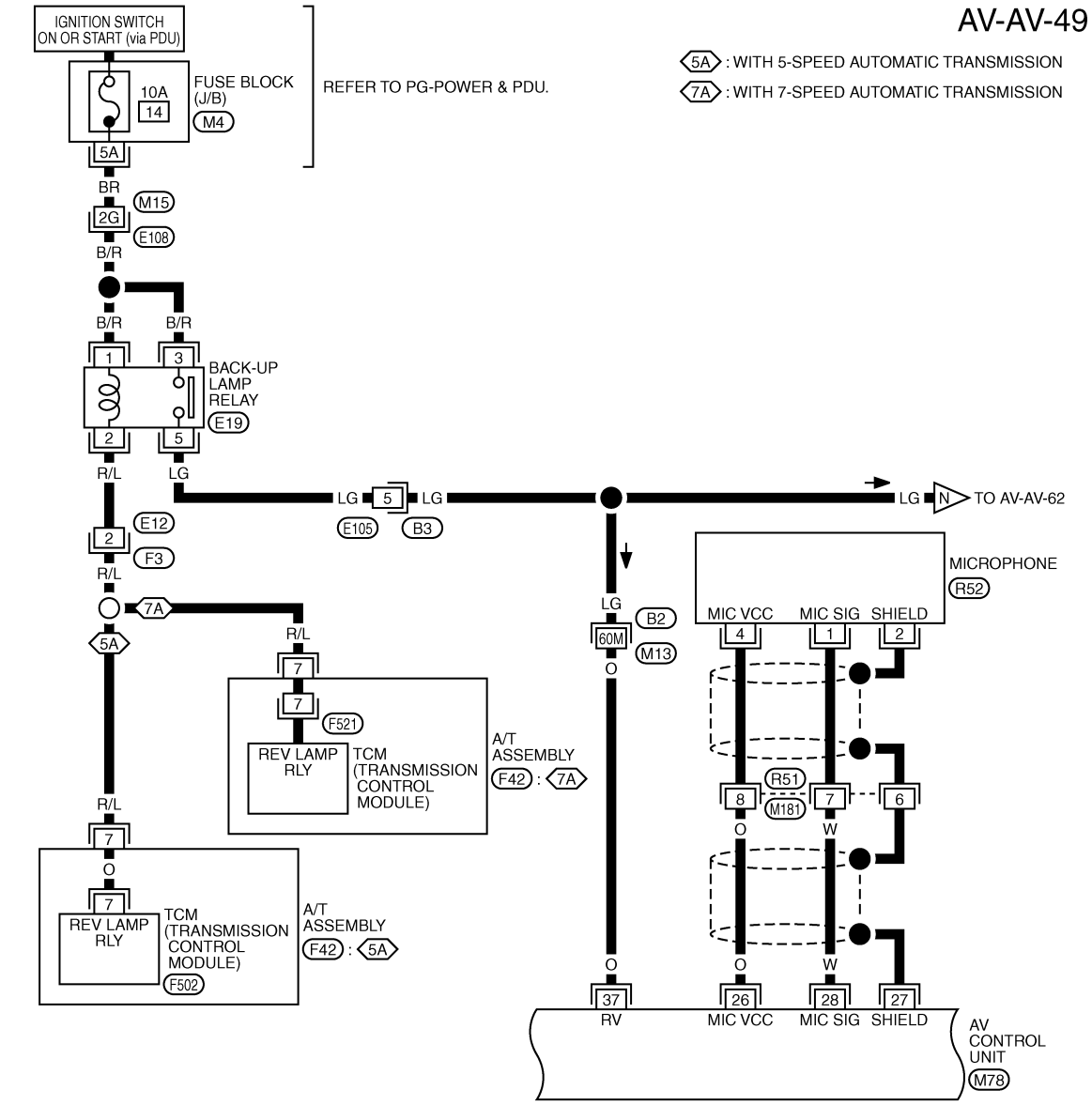


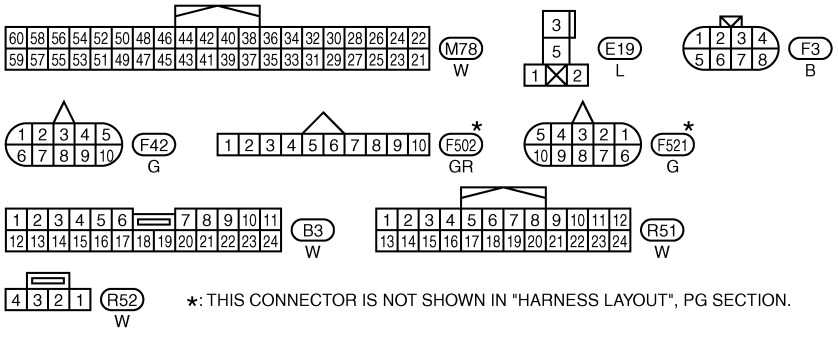


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8294E

AV-AV-49

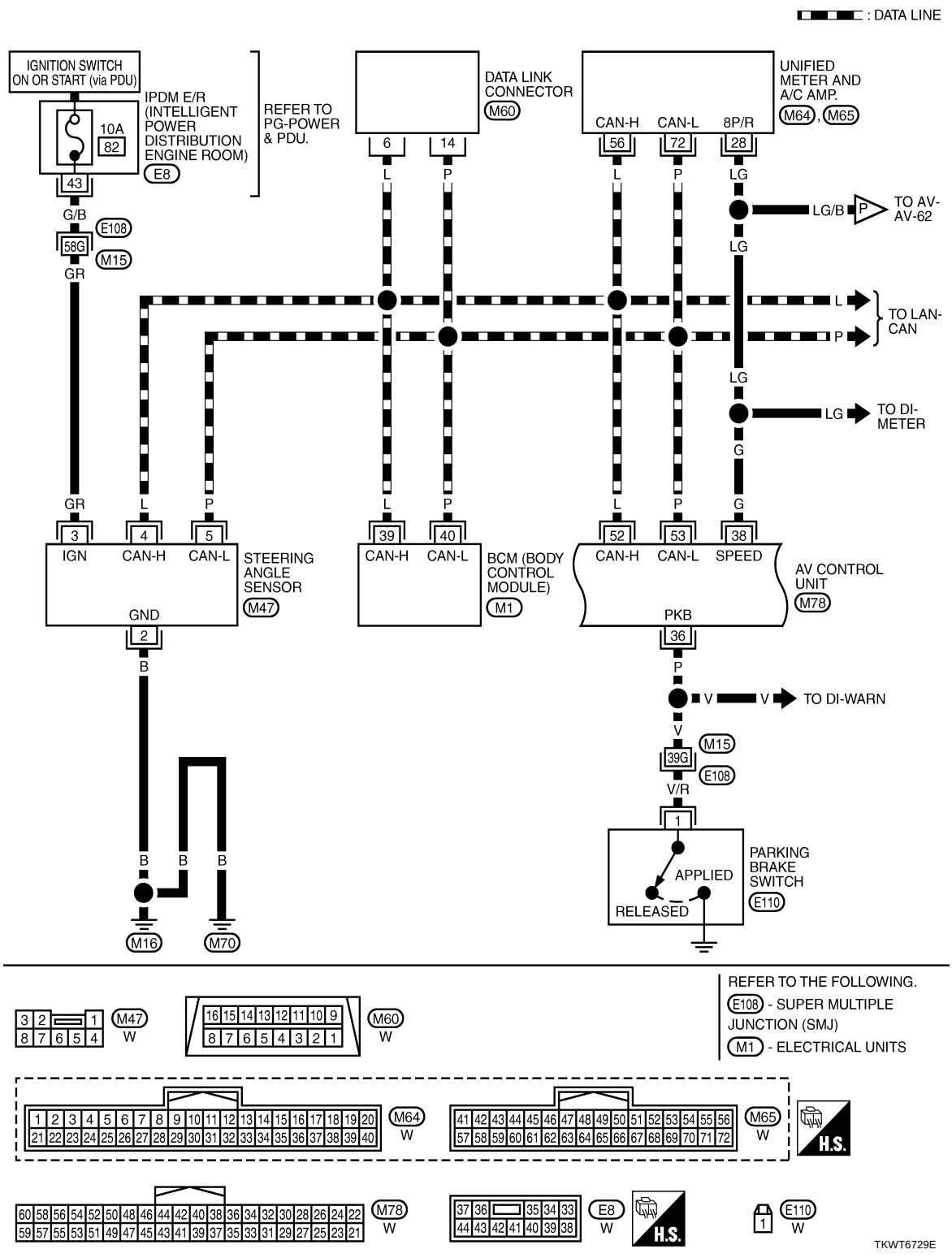




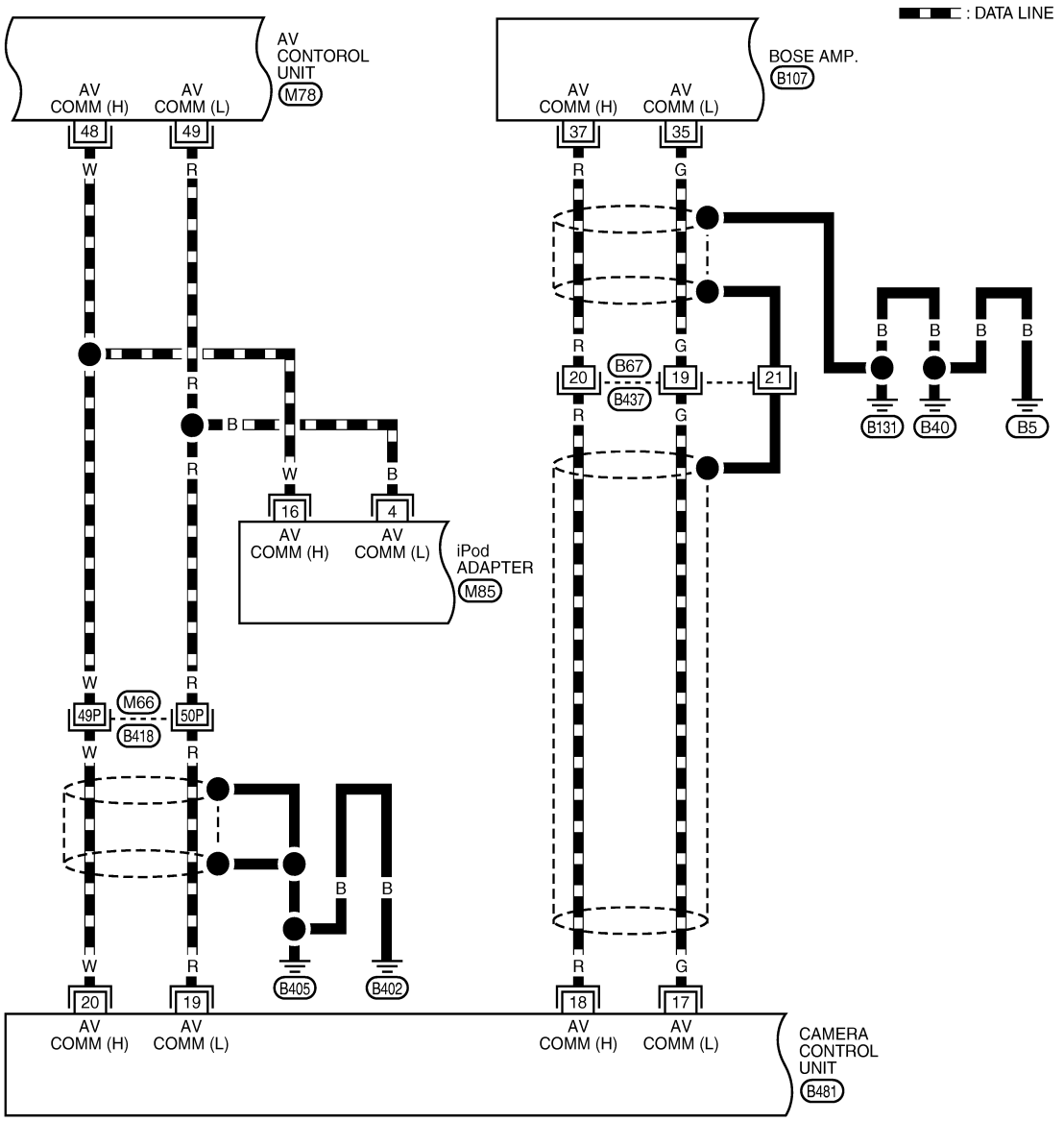
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

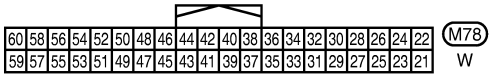
TKWT8295E

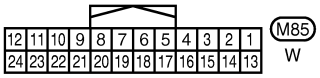
AV-AV-50

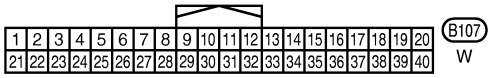

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
G/B
E108
58G
M15
GR
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6 14
L P
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56 72 28
L P LG
LG/B P TO AV-AV-62
LG
L TO LAN-CAN
P
LG
LG TO DI-METER
G
GR L P L P L P G
3 4 5 39 40 52 53 38
IGN CAN-H CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
CAN-H CAN-L
BCM (BODY CONTROL MODULE) M1
CAN-H CAN-L SPEED
AV CONTROL UNIT M78
PKB
36
P
V V TO DI-WARN
V
M15
39G
E108
V/R
1
PARKING BRAKE SWITCH E110
APPLIED
RELEASED
B B B
M16 M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47 W
M60 W
M64 W
M65 W
H.S.
M78 W
E8 W
E110 W
TKWT6729E

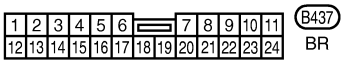
AV-AV-51

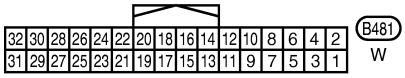








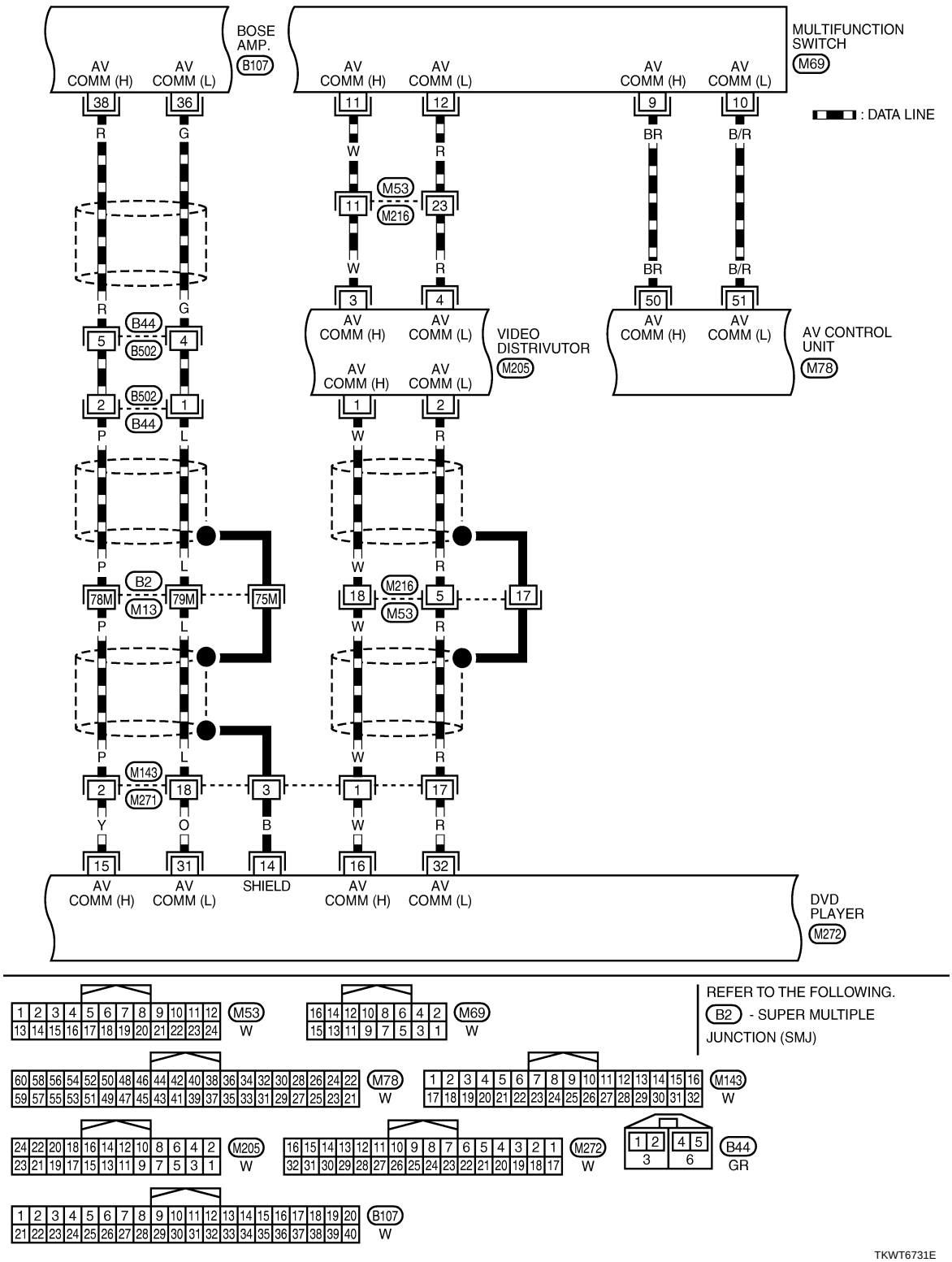




REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

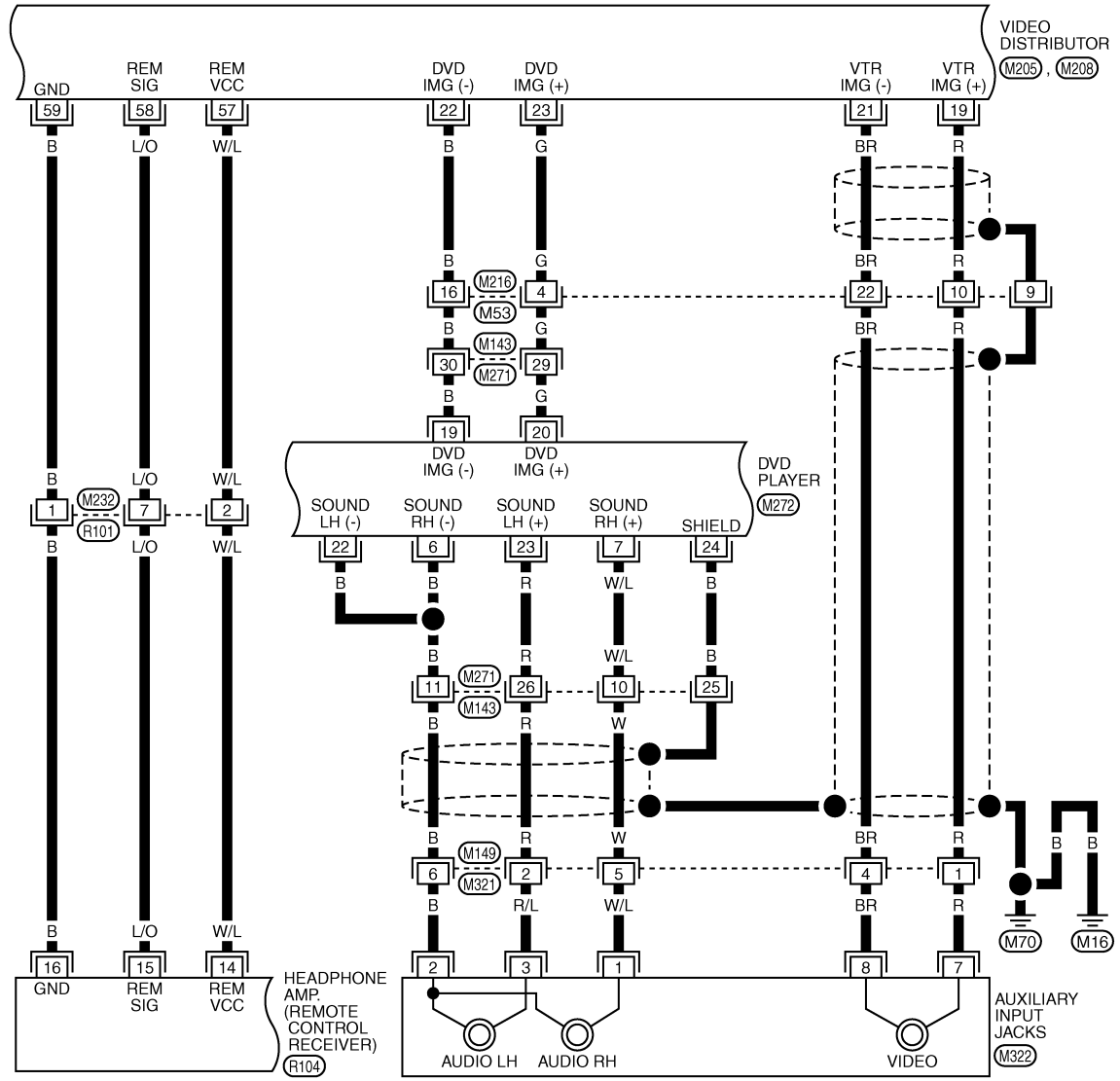
TKWT6730E

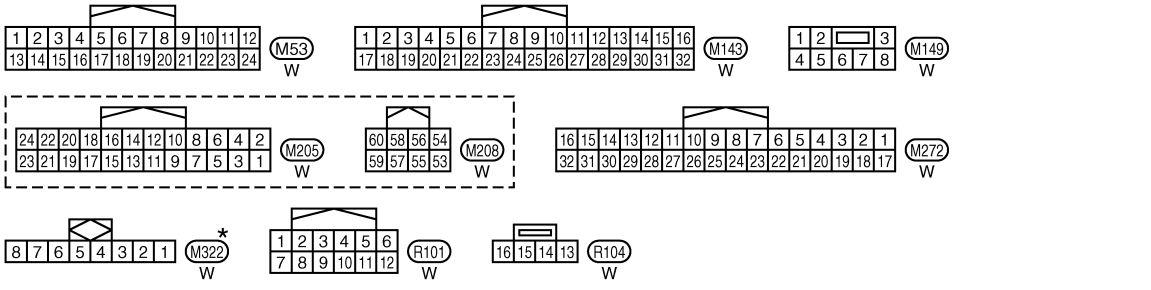
AV-AV-52



TKWT6731E

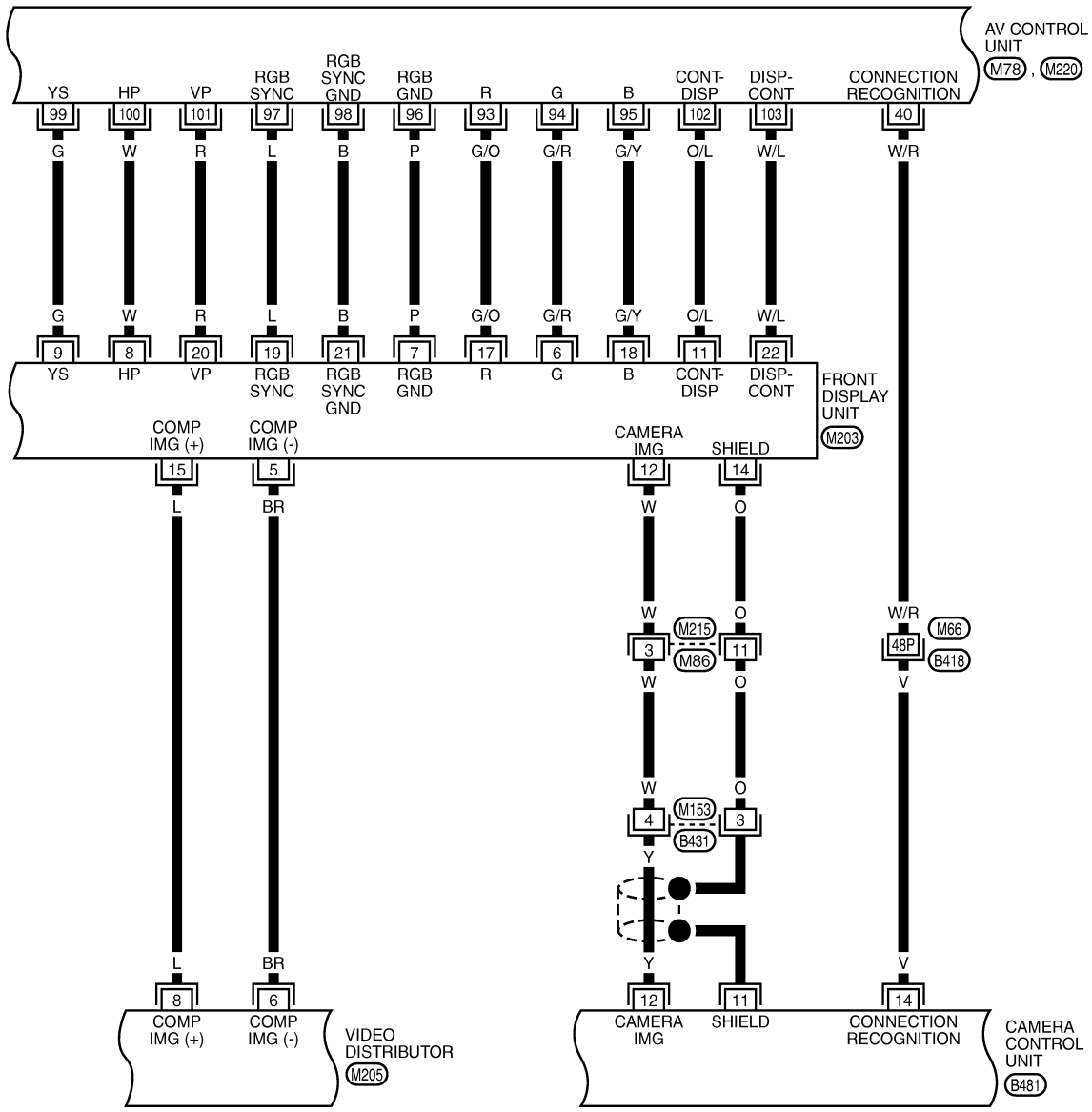
AV-AV-53

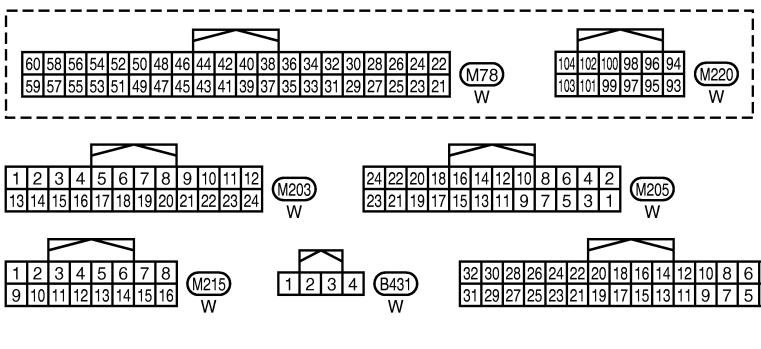




TKWT8296E

AV-AV-54

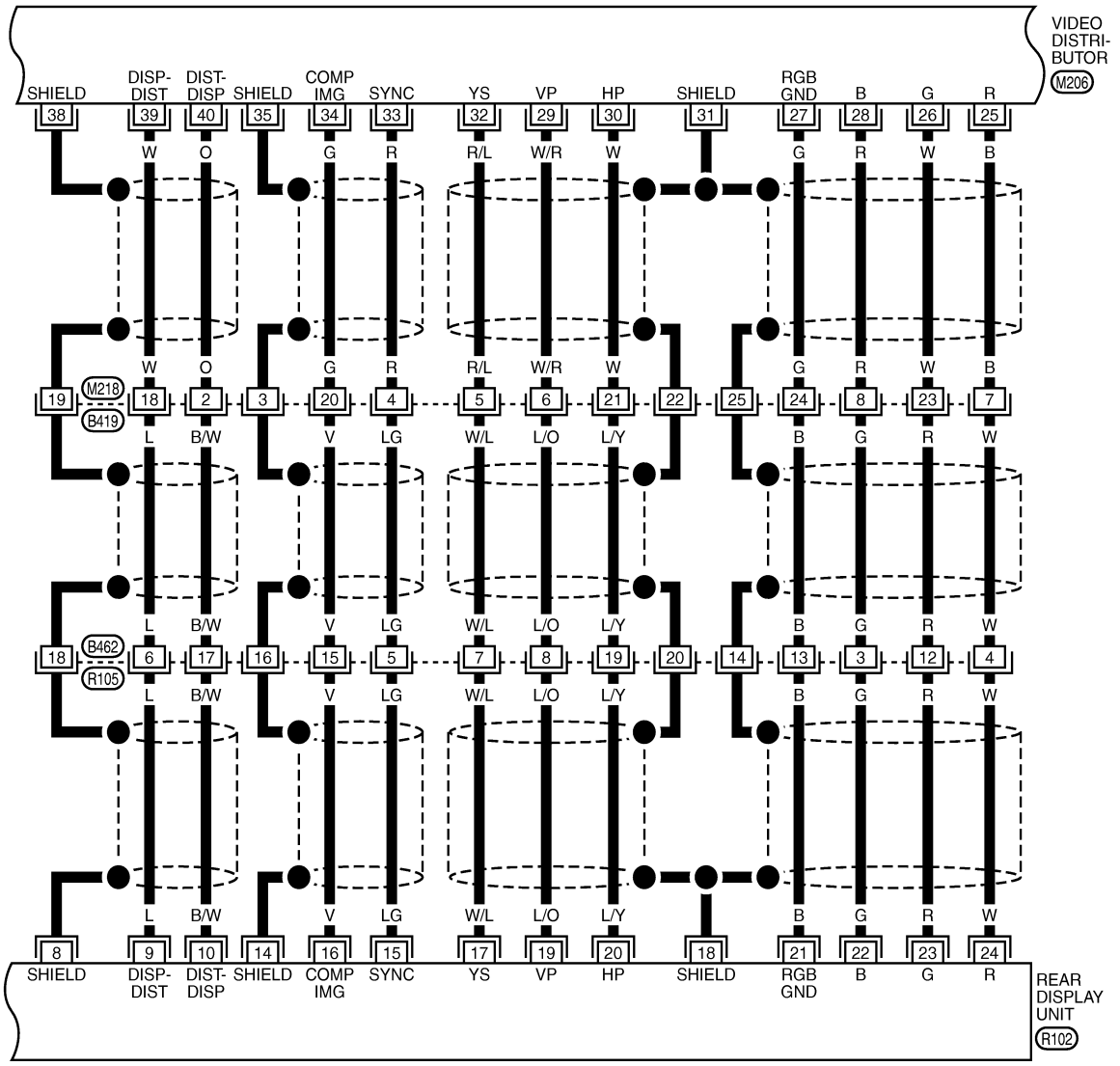


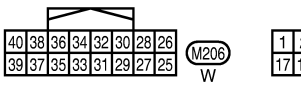


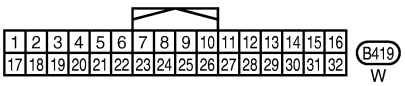
REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

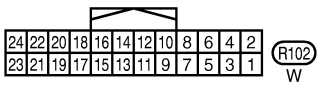
TKWT6733E

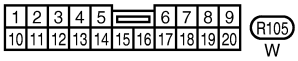
AV-AV-55





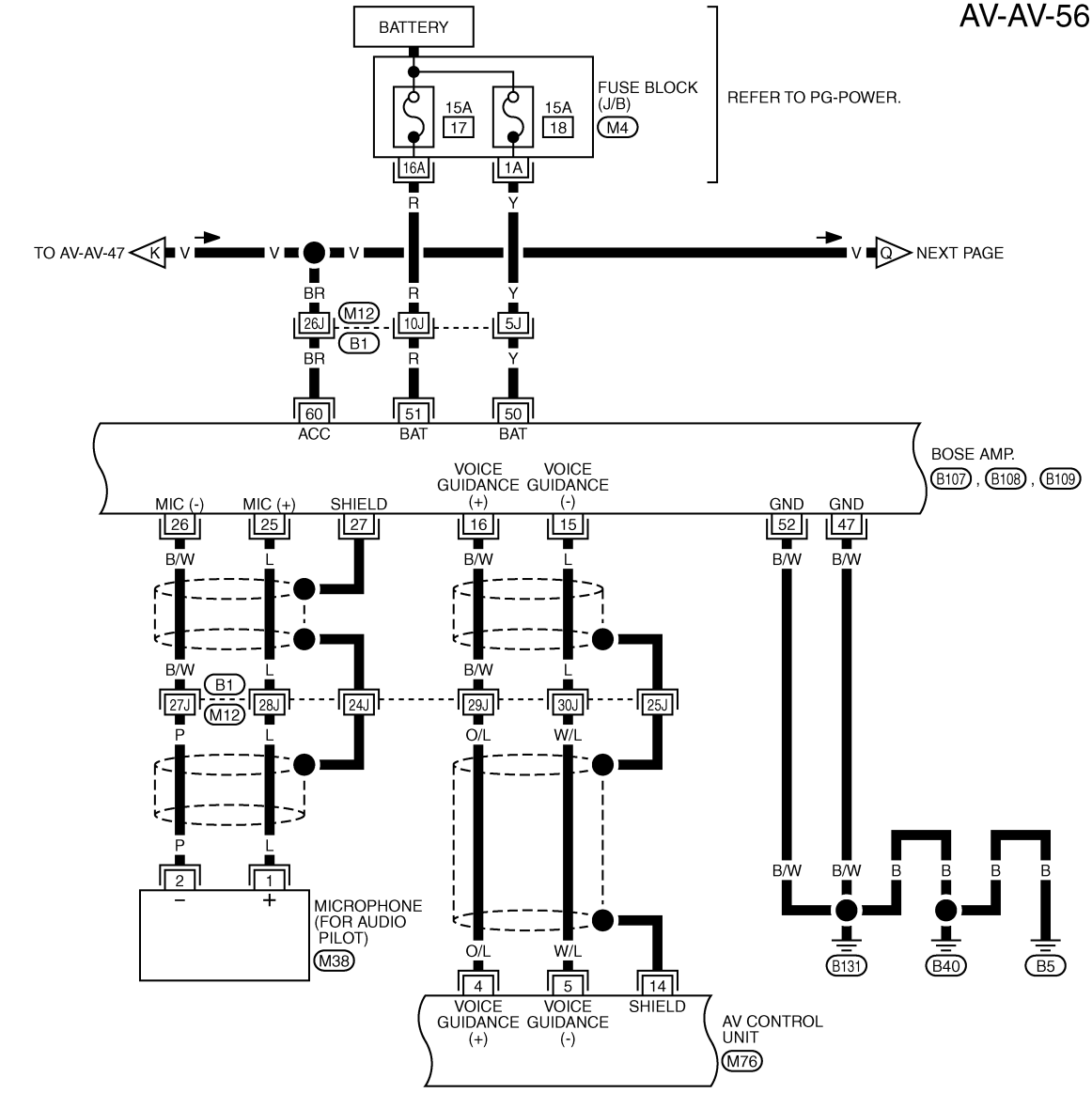


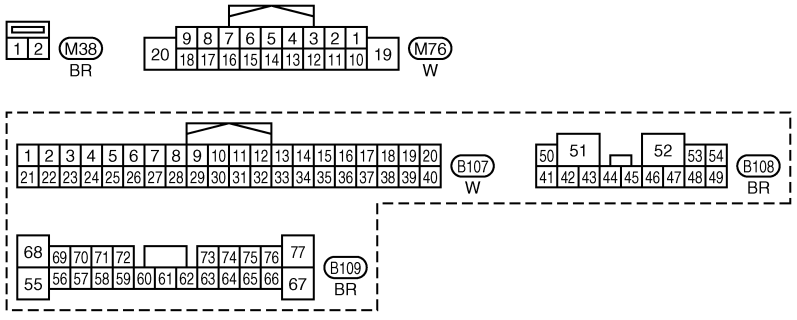




TKWT6734E

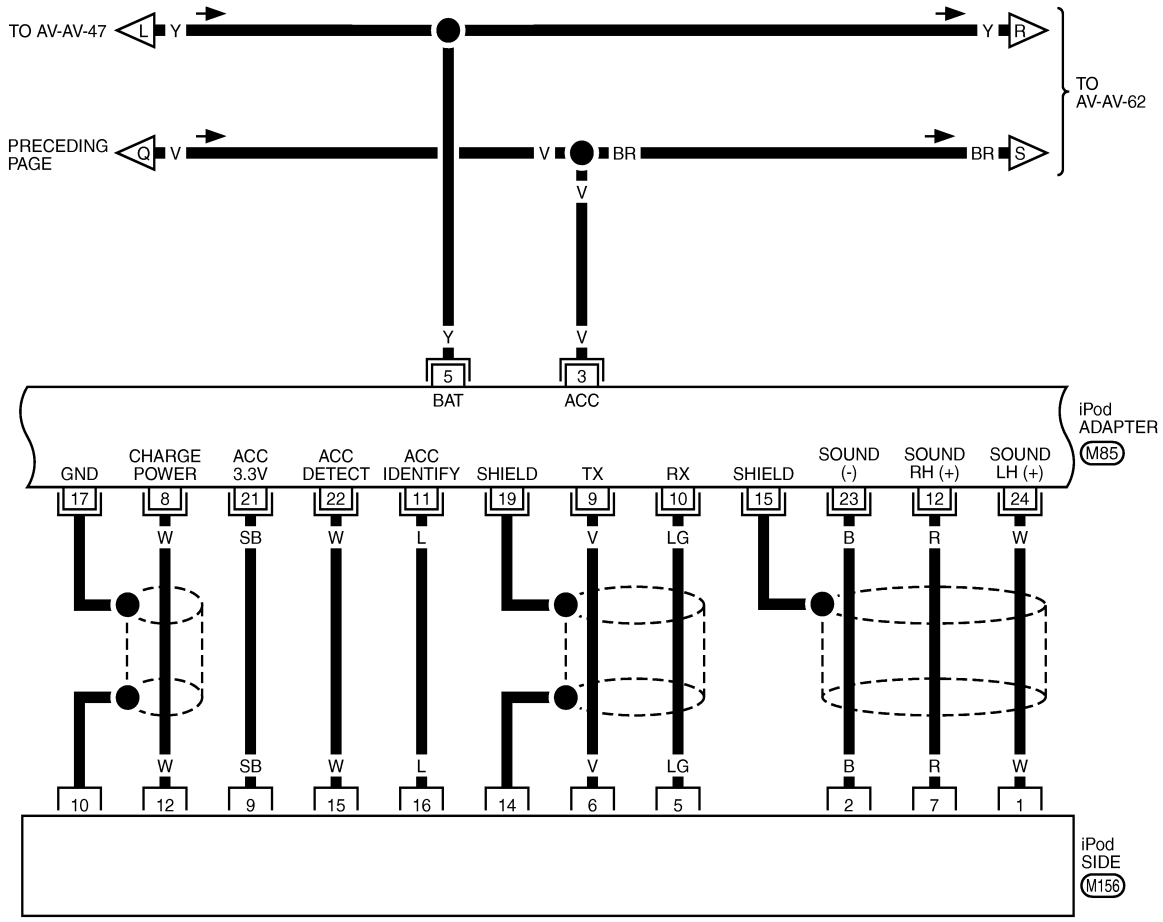
AV-AV-56

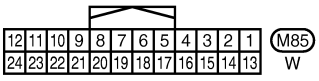


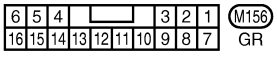


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8297E

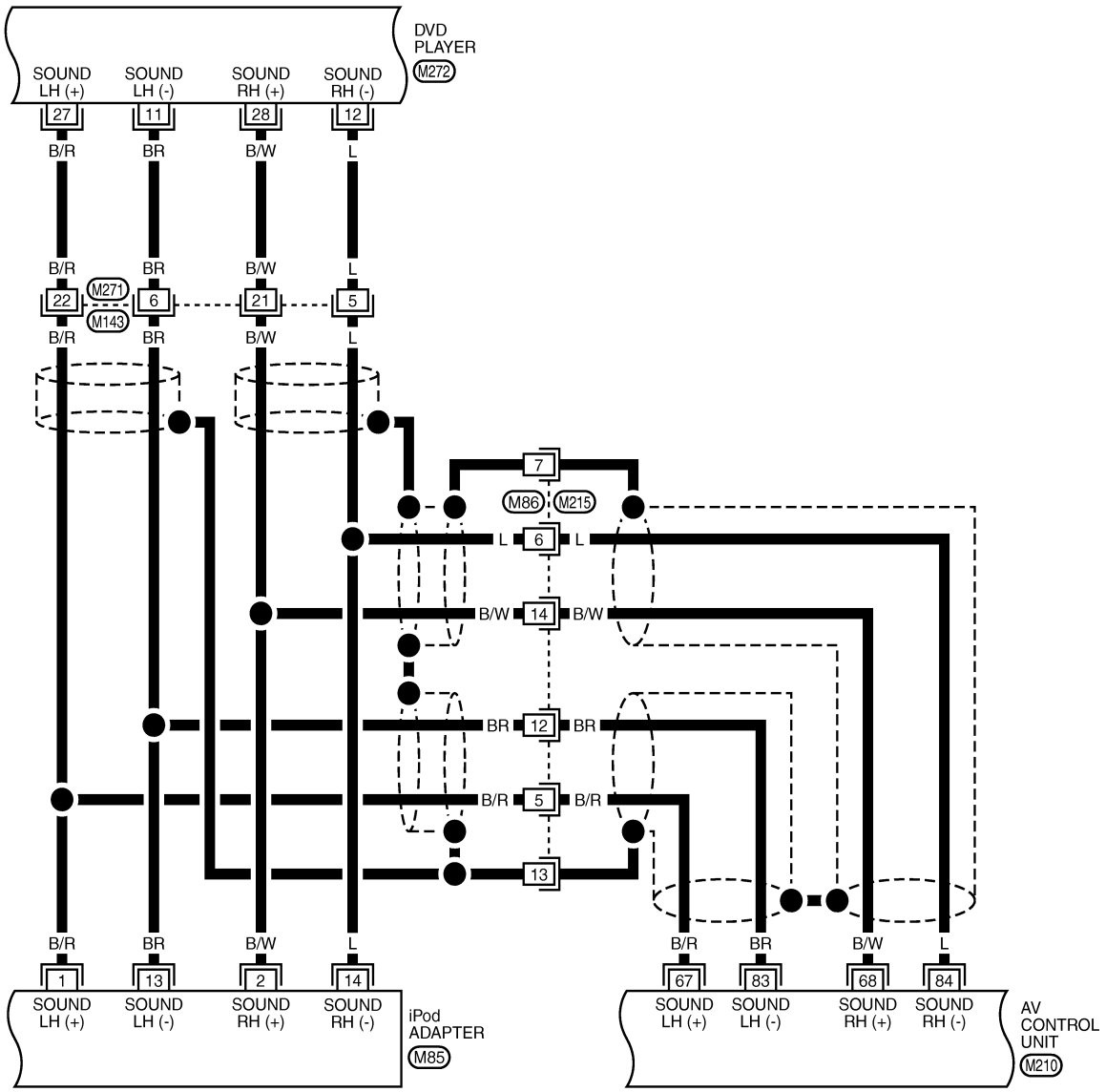

TO AV-AV-47
L
Y
Y
R
TO
AV-AV-62
PRECEDING
PAGE
Q
V
V
BR
BR
S
V
Y
V
5
BAT
3
ACC
iPod
ADAPTER
M85
GND
CHARGE
POWER
ACC
3.3V
ACC
DETECT
ACC
IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND
(-)
SOUND
RH (+)
SOUND
LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod
SIDE
M156

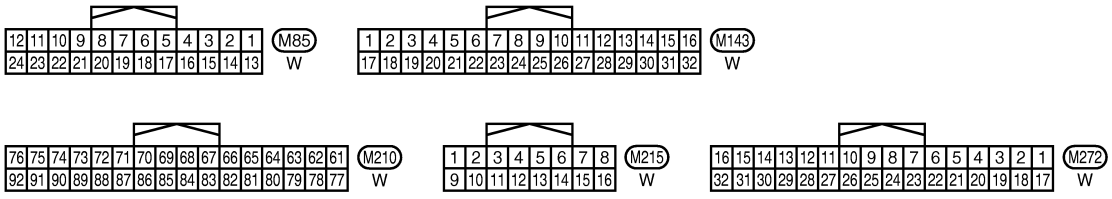

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6737E

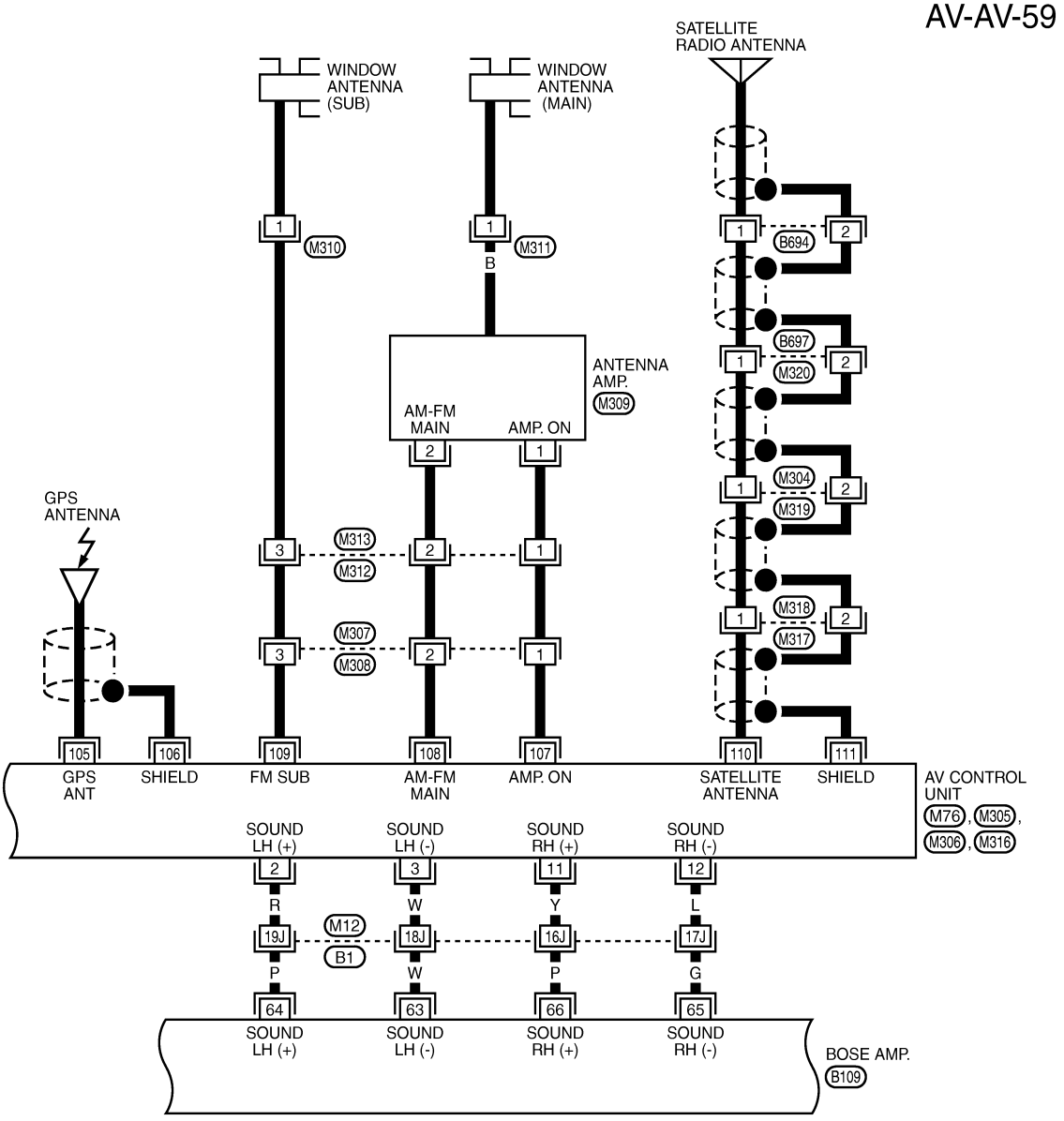
AV-AV-58

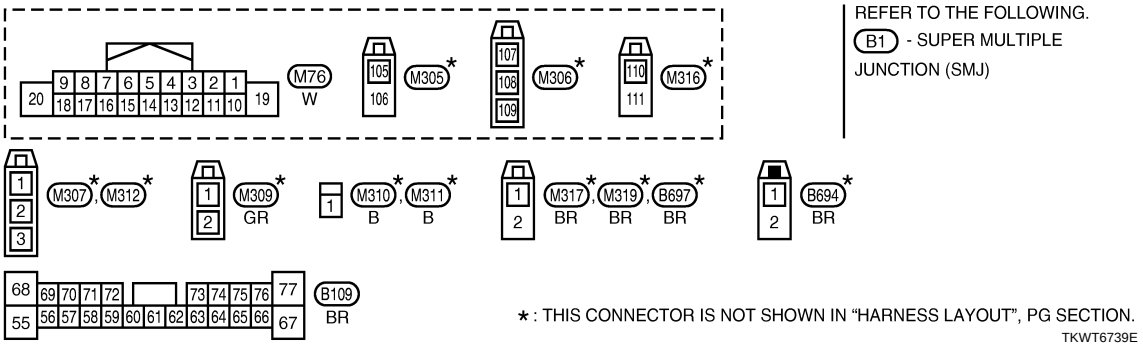




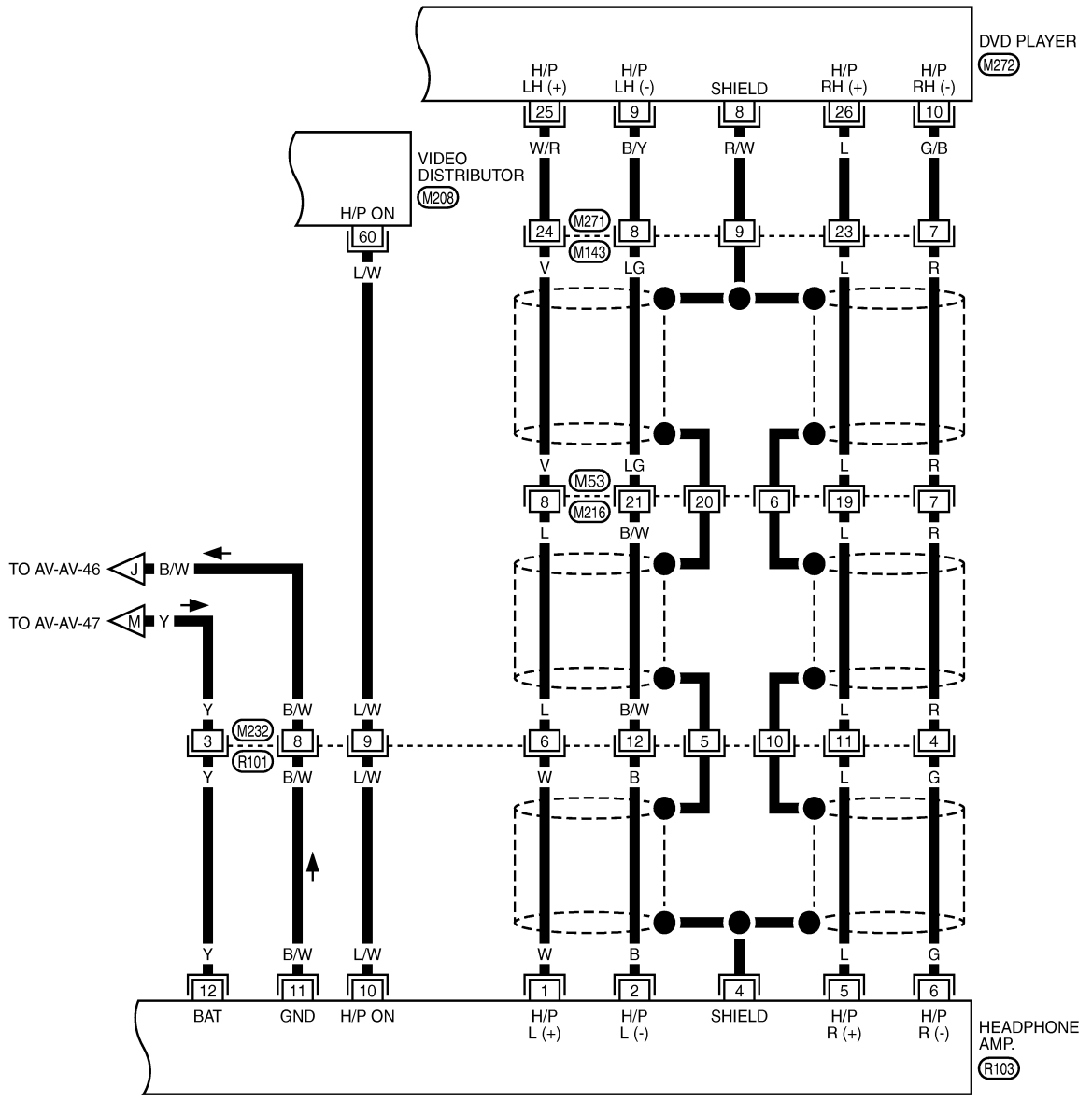
TKWT6738E

AV-AV-59


SATELLITE RADIO ANTENNA
WINDOW ANTENNA (SUB)
WINDOW ANTENNA (MAIN)
M310
M311
B
B694
B697
M320
M304
M319
M318
M317
ANTENNA AMP.
M309
AM-FM MAIN
AMP. ON
GPS ANTENNA
M313
M312
M307
M308
105
106
109
108
107
110
111
GPS ANT
SHIELD
FM SUB
AM-FM MAIN
AMP. ON
SATELLITE ANTENNA
SHIELD
AV CONTROL UNIT
M76, M305, M306, M316
SOUND LH (+)
SOUND LH (-)
SOUND RH (+)
SOUND RH (-)
R
W
Y
L
M12
B1
19J
18J
16J
17J
P
W
P
G
64
63
66
65
BOSE AMP.
B109

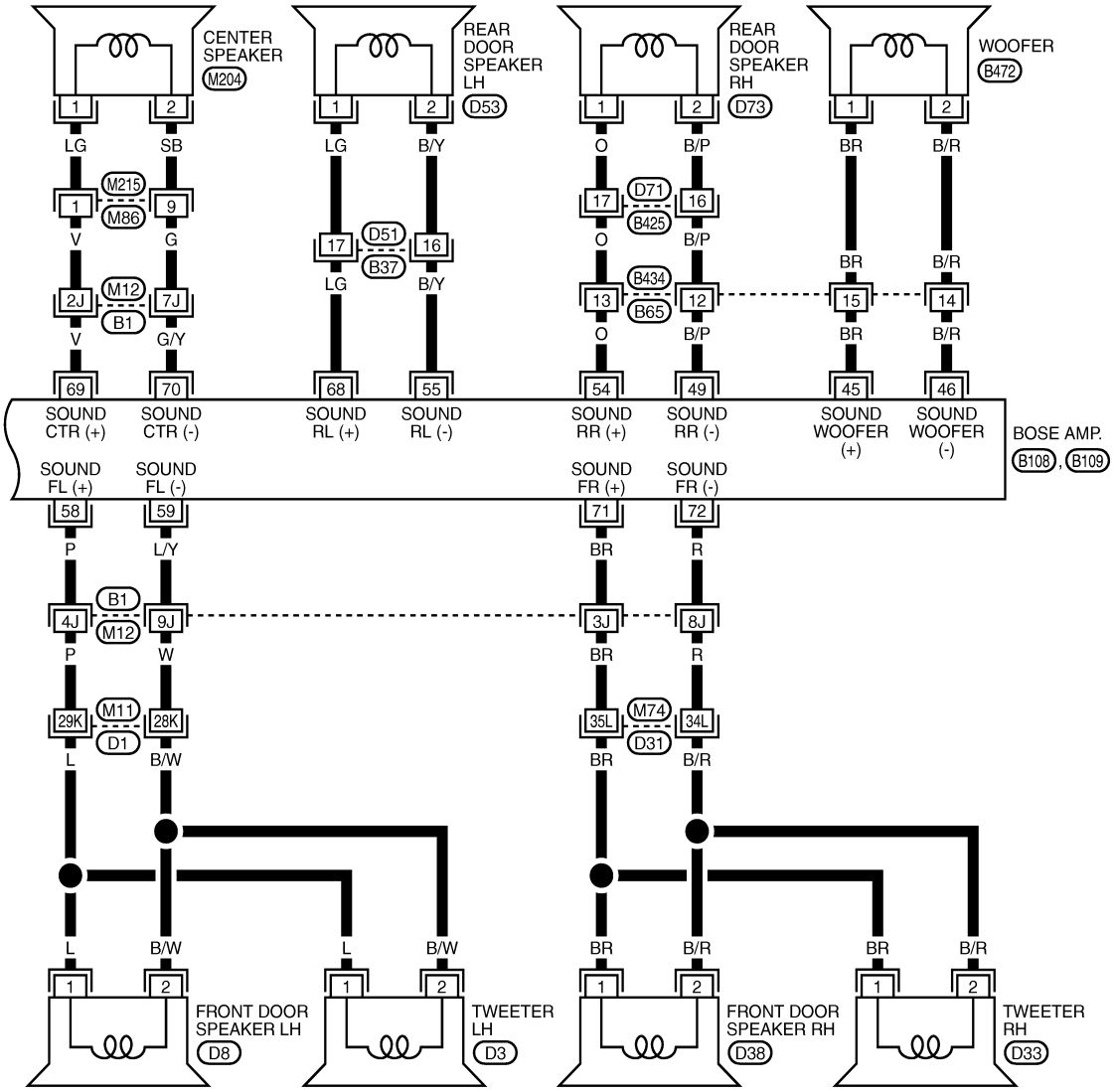

M76
W
M305
M306
M316
M307, M312
M309
GR
M310, M311
B
B
M317, M319, M697
BR
BR
BR
B694
B109
BR
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)
★ : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.
TKWT6739E

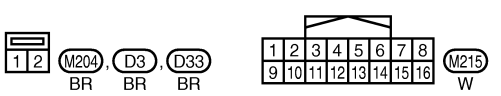
AV-AV-60



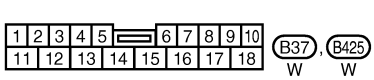
TKWT6740E

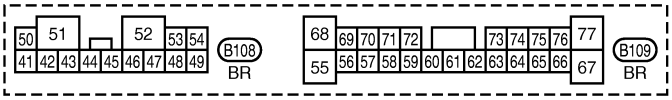
AV-AV-61

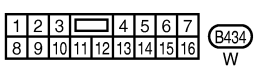


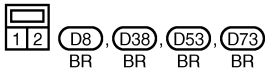


REFER TO THE FOLLOWING.
B1, D1, D31 - SUPER MULTIPLE JUNCTION (SMJ)



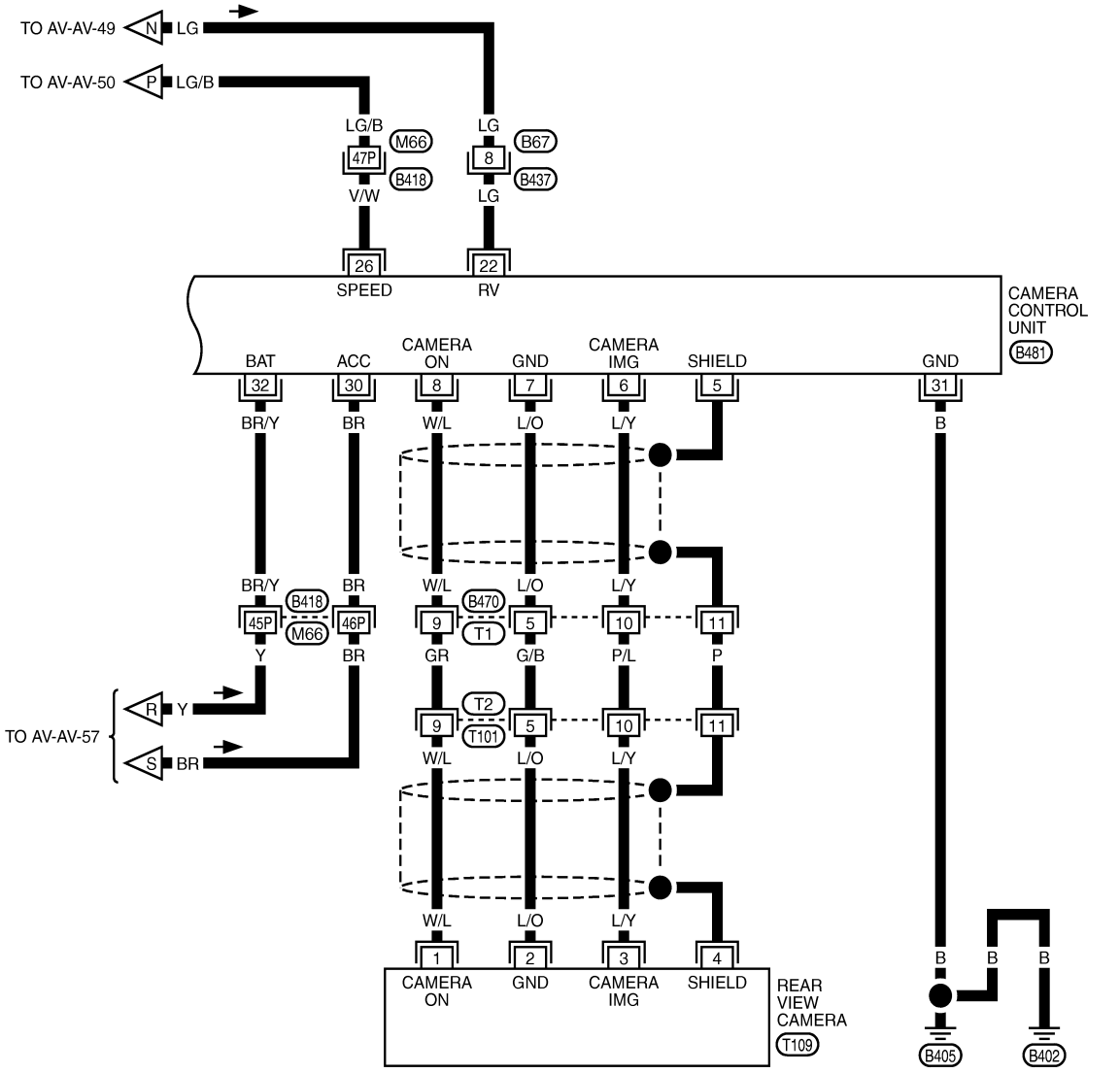


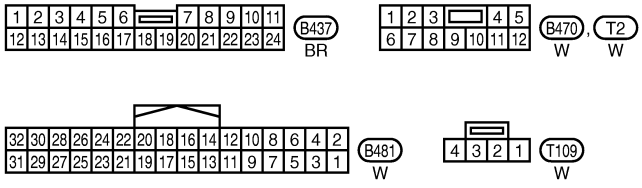




TKWT6741E

AV-AV-62



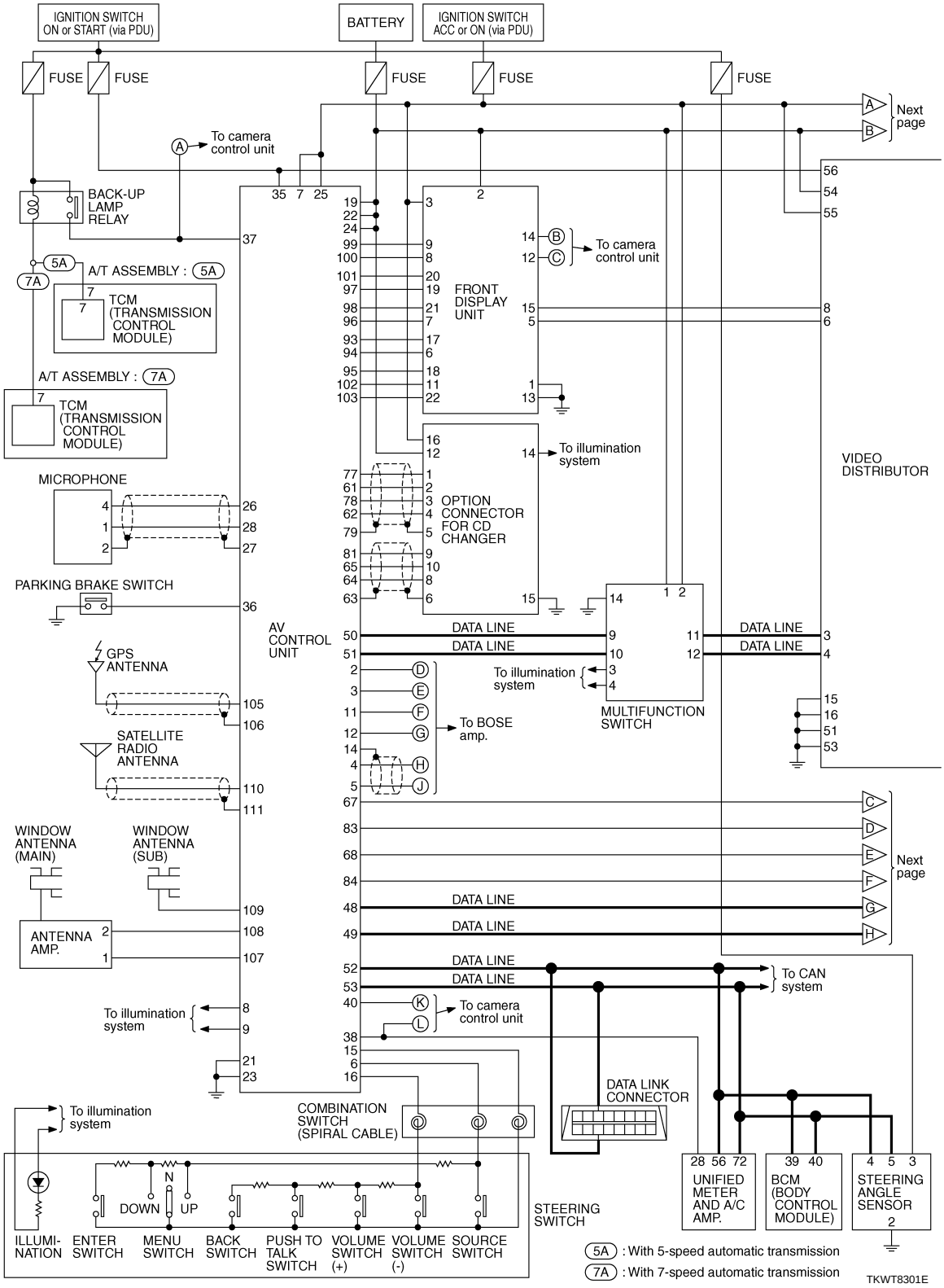


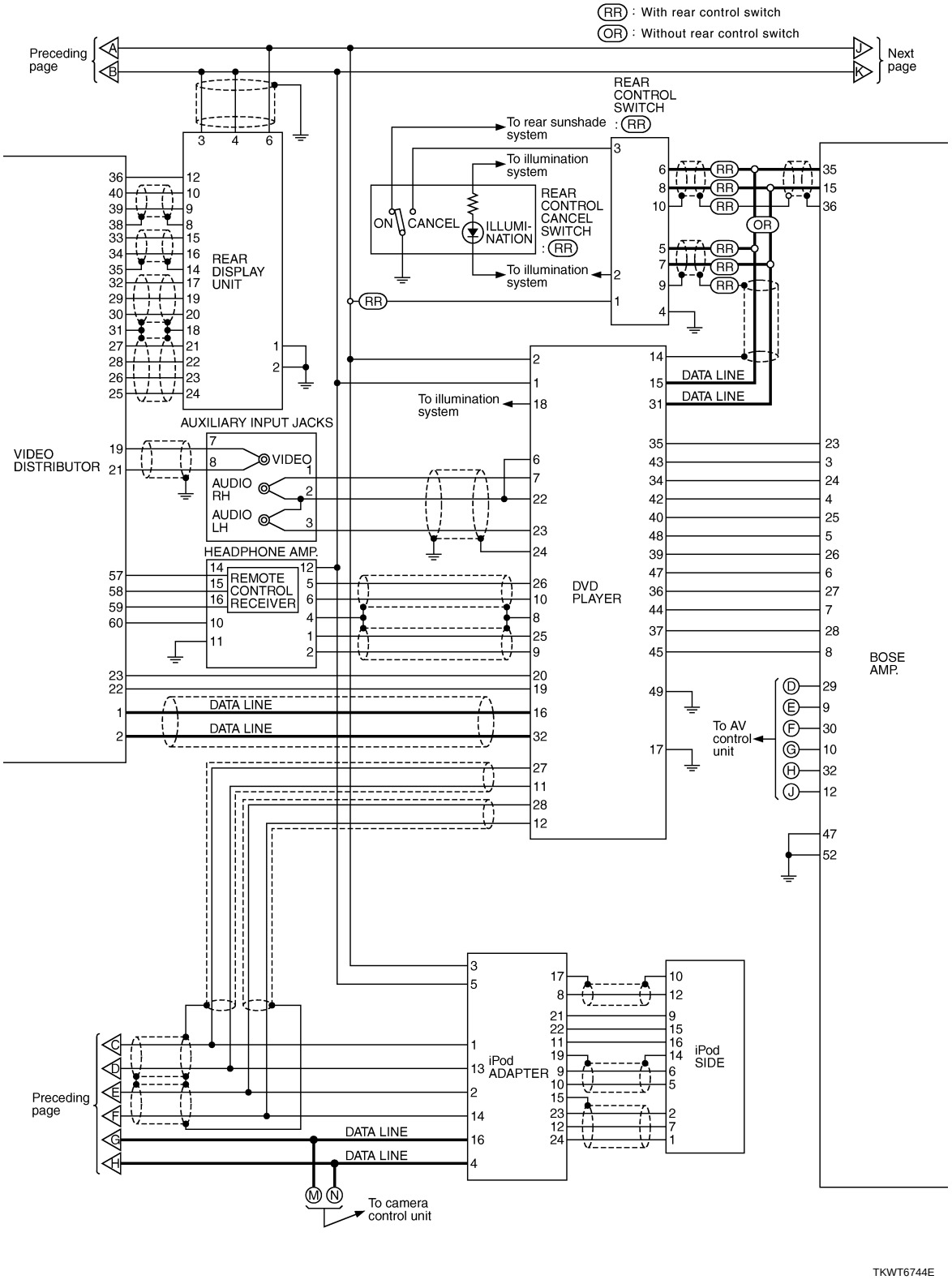
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

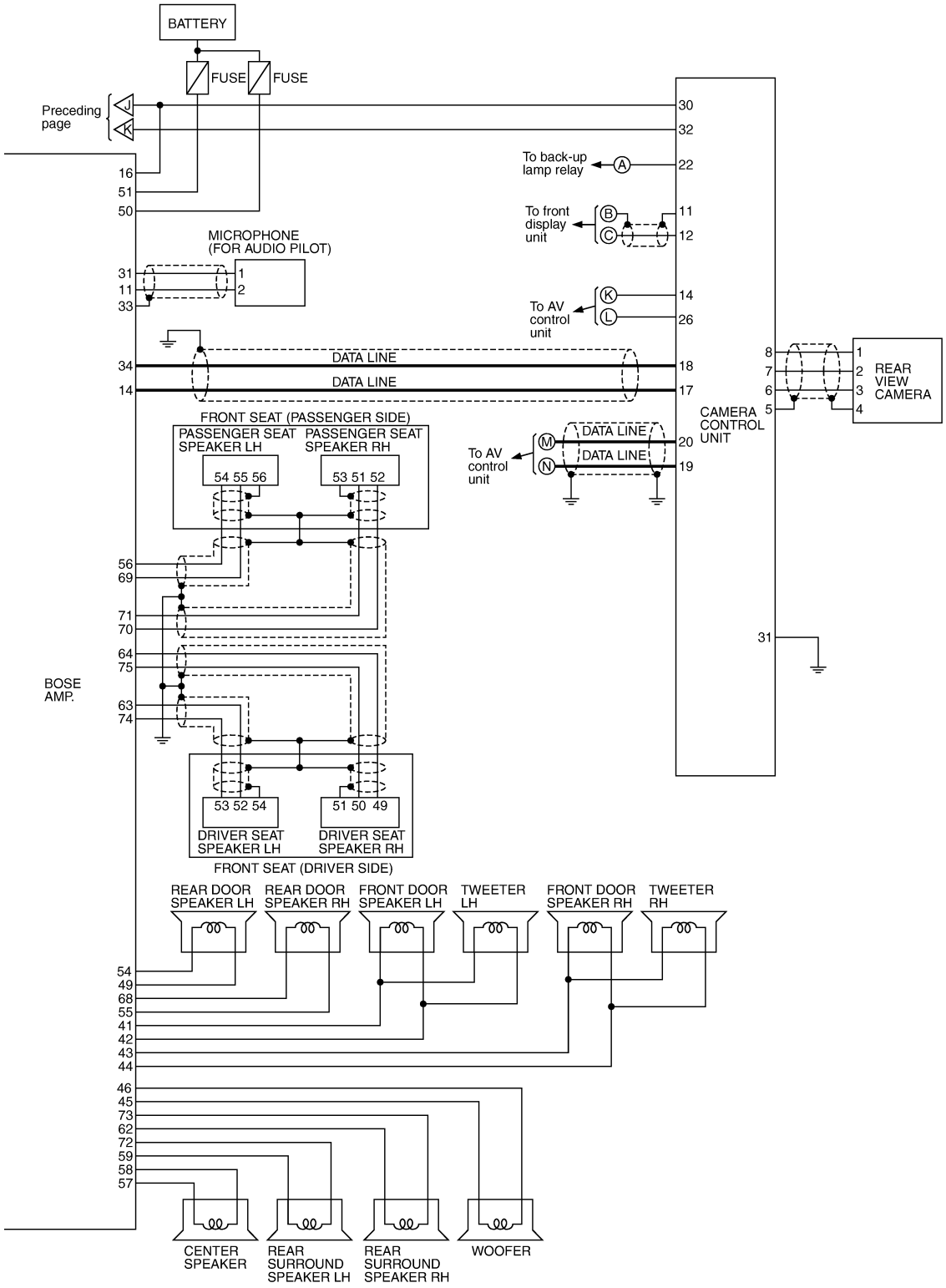
TKWT6742E

Schematic - BOSE 5.1ch Surround Audio System -

INFOID:0000000004391600




RR : With rear control switch
OR : Without rear control switch
Preceding page
Next page
REAR CONTROL SWITCH : RR
To rear sunshade system
To illumination system
REAR CONTROL CANCEL SWITCH : RR
ON
CANCEL
ILLUMI-NATION
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
DVD PLAYER
DATA LINE
BOSE AMP.
To AV control unit
iPod ADAPTER
iPod SIDE
To camera control unit
TKWT6744E



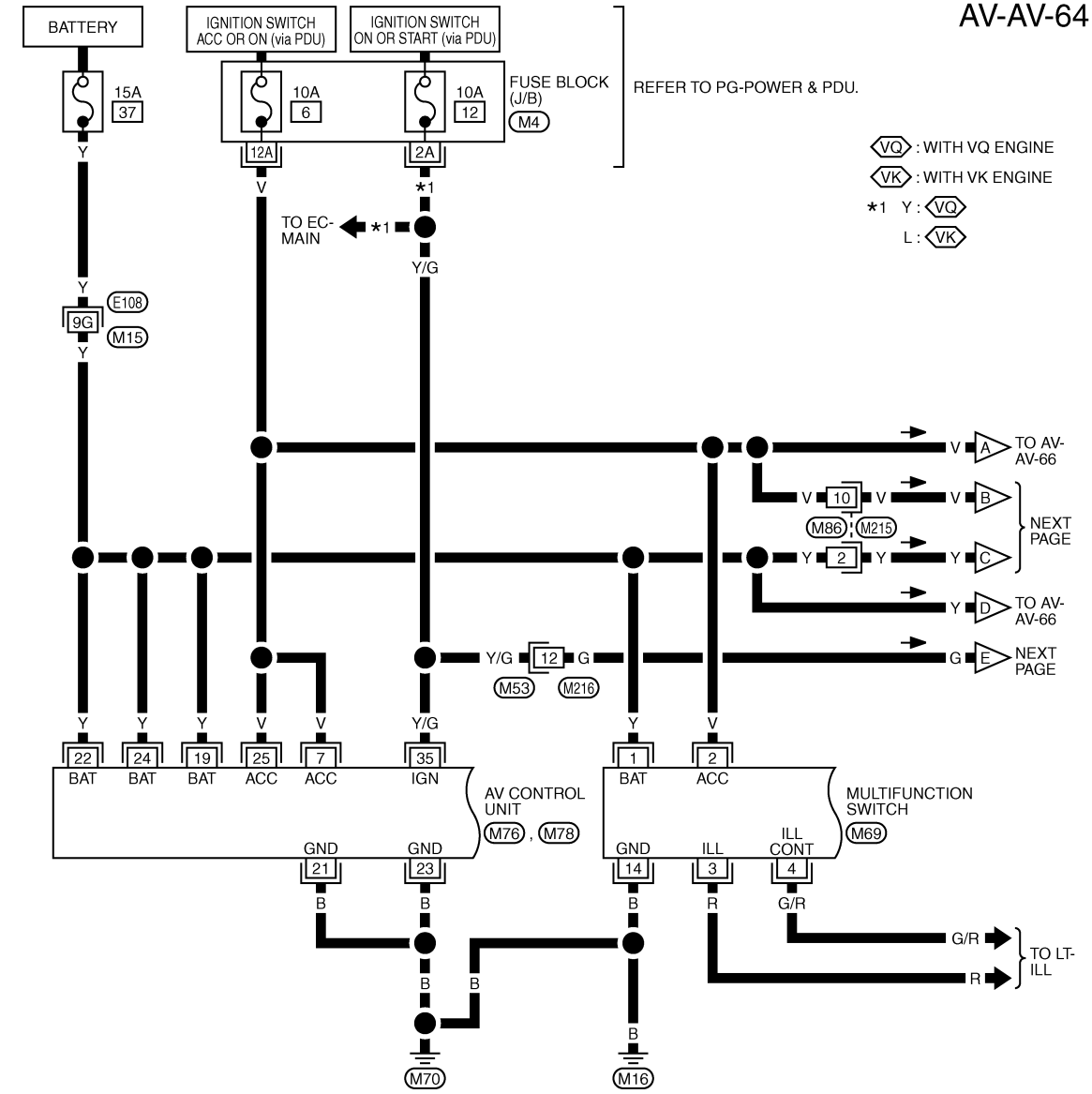
TKWT6745E

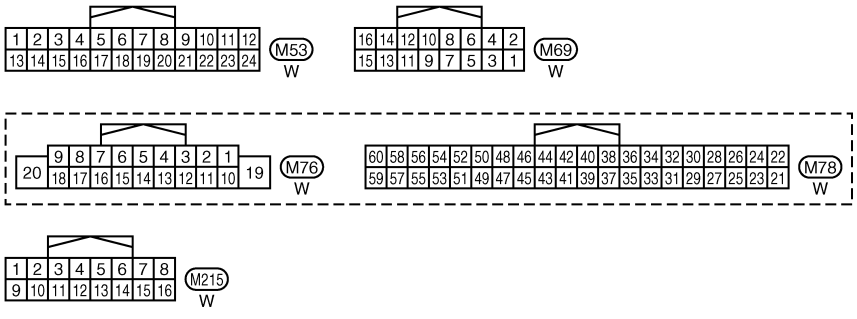
Wiring Diagram - AV - / BOSE Surround Audio 5.1ch System

INFOID:0000000004391601

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

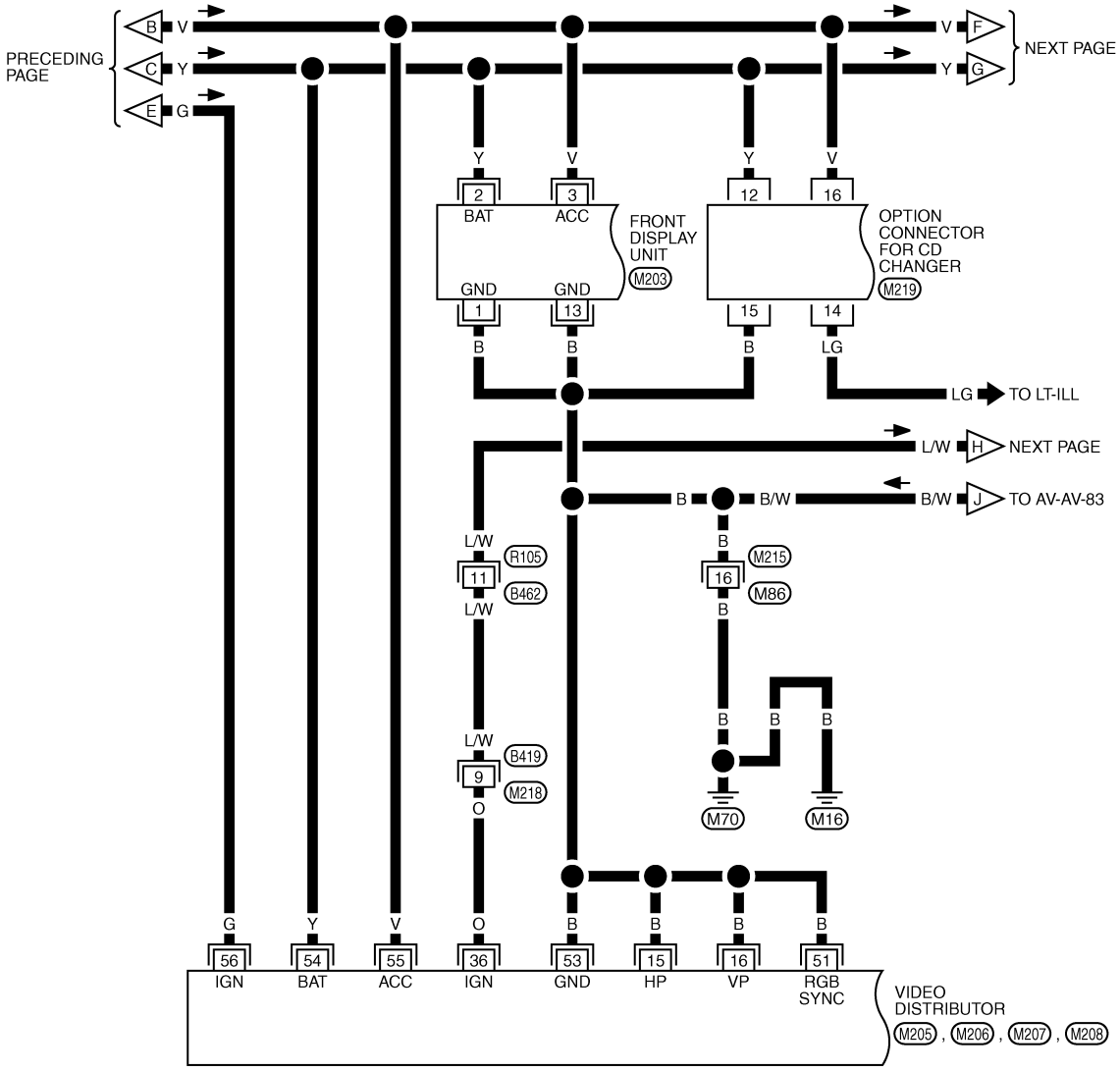


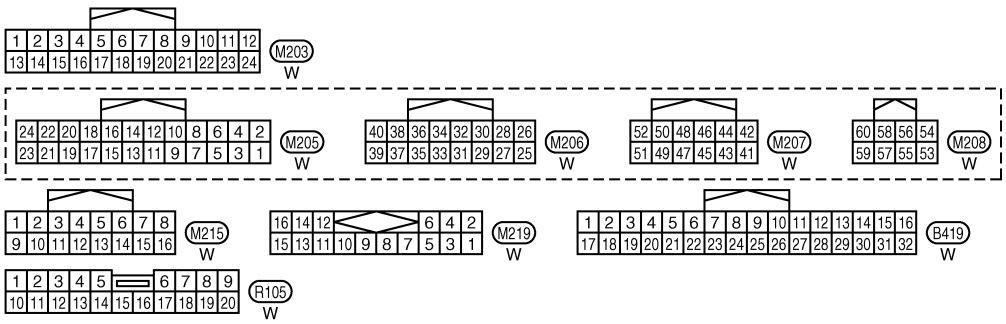


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8302E

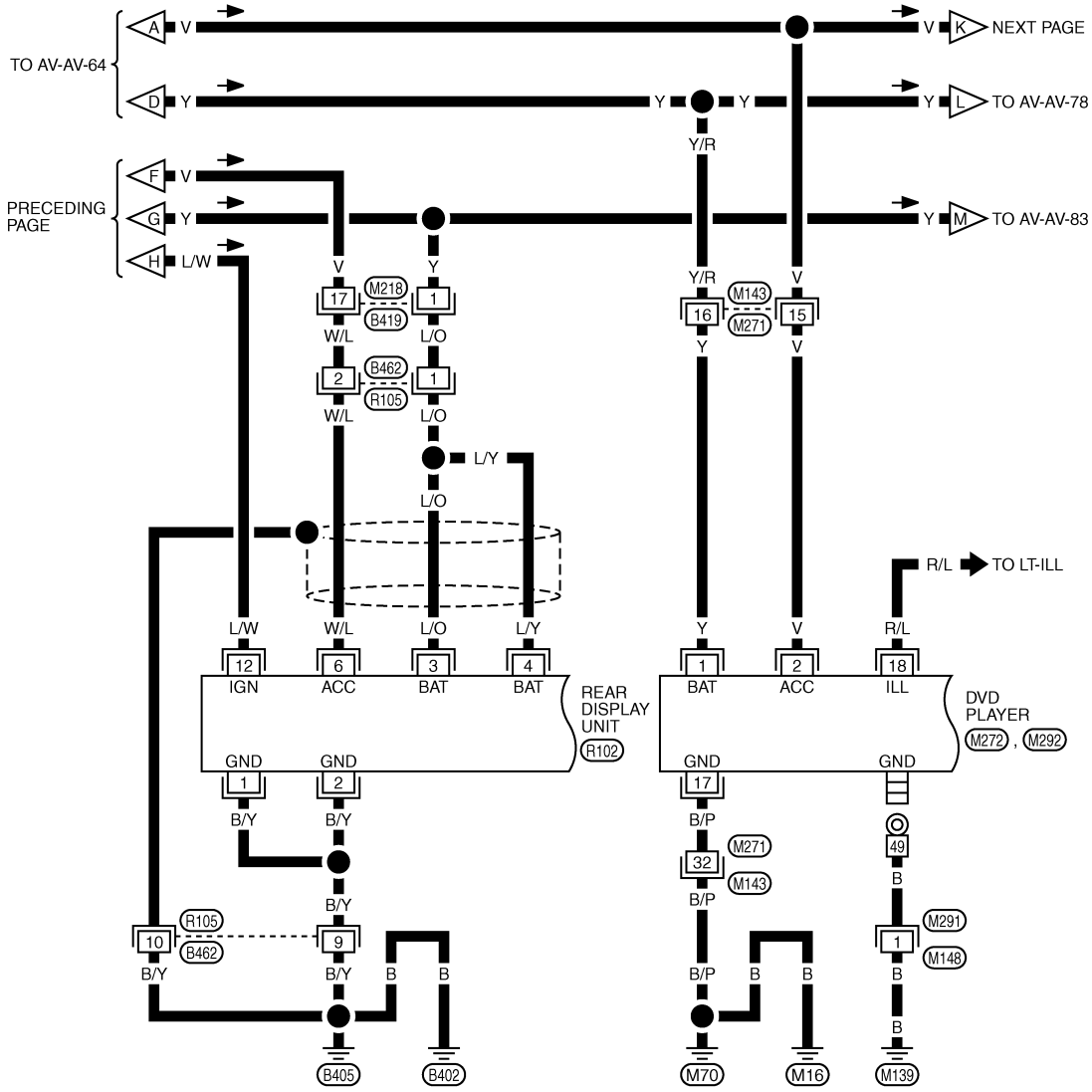
AV-AV-65

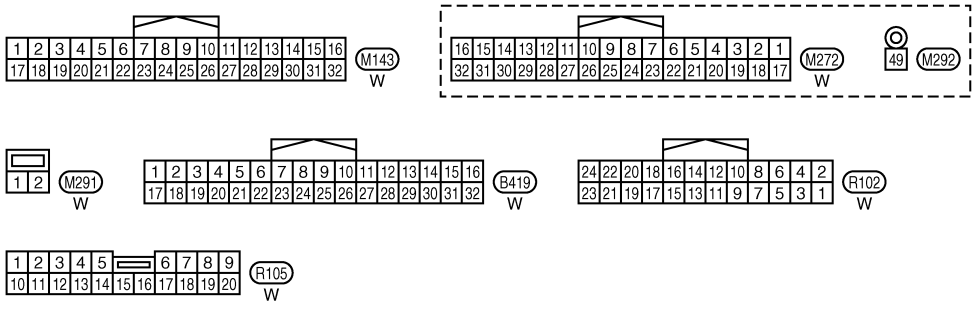




TKWT8303E

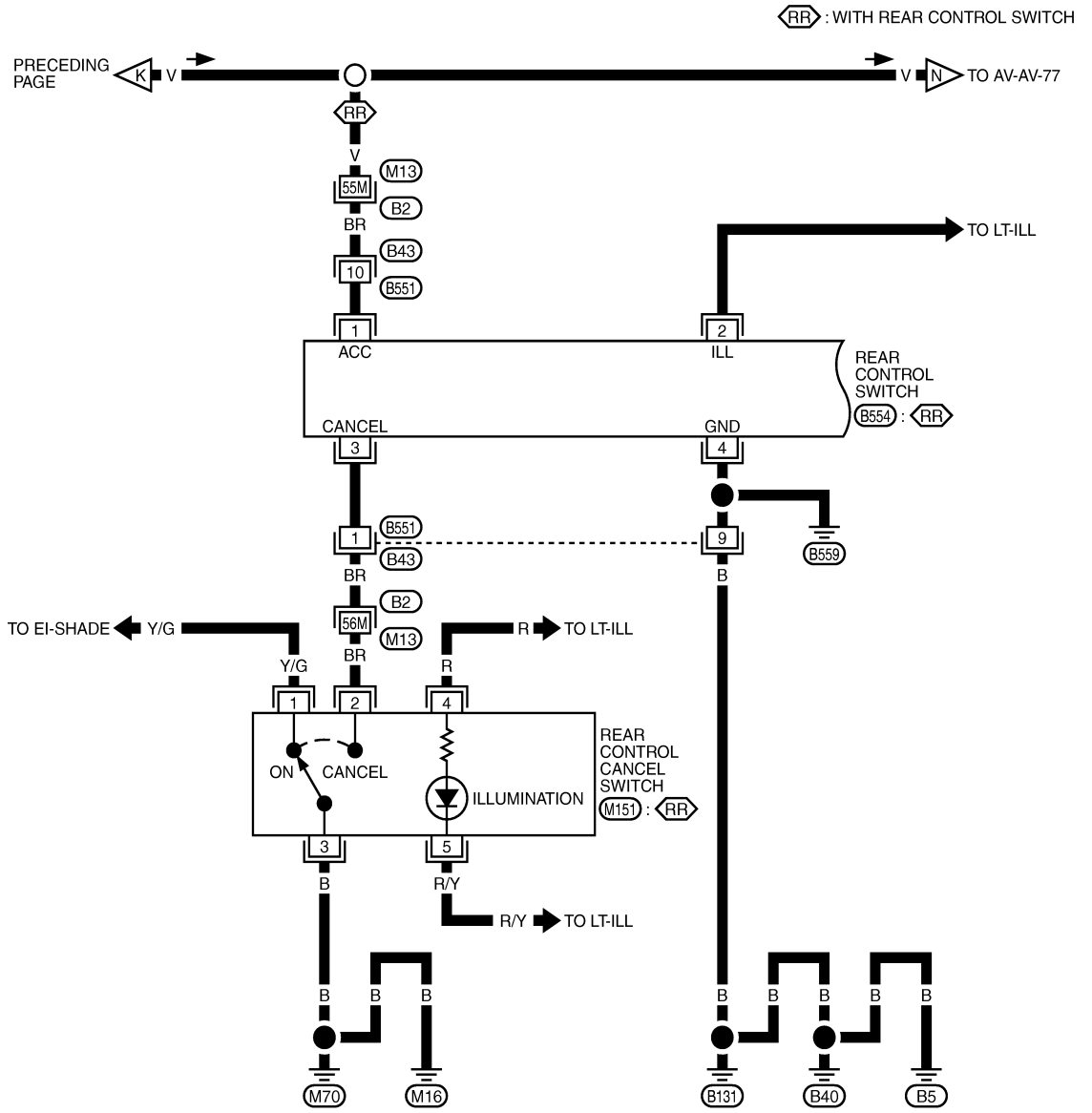
AV-AV-66

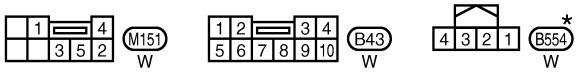




TKWT8304E

AV-AV-67



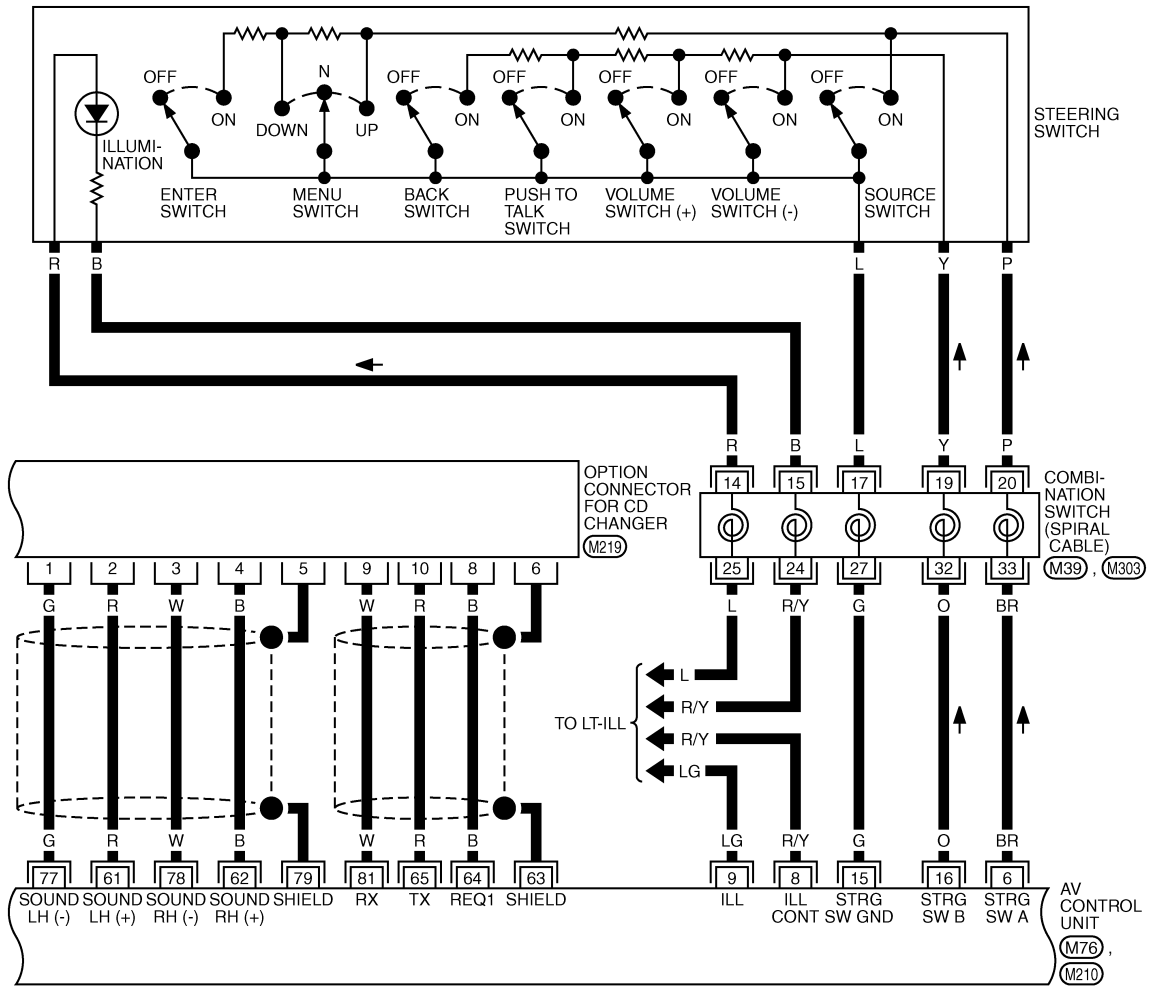


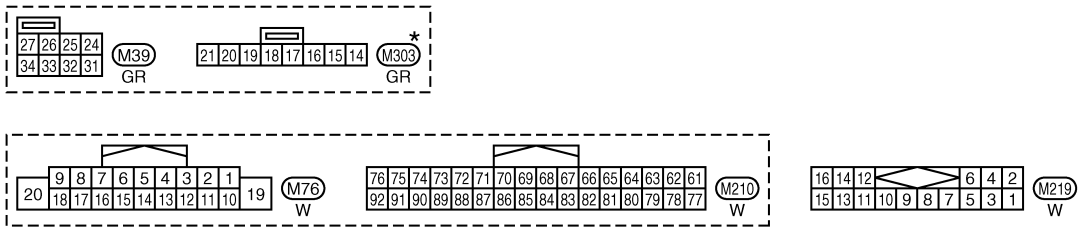
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6749E

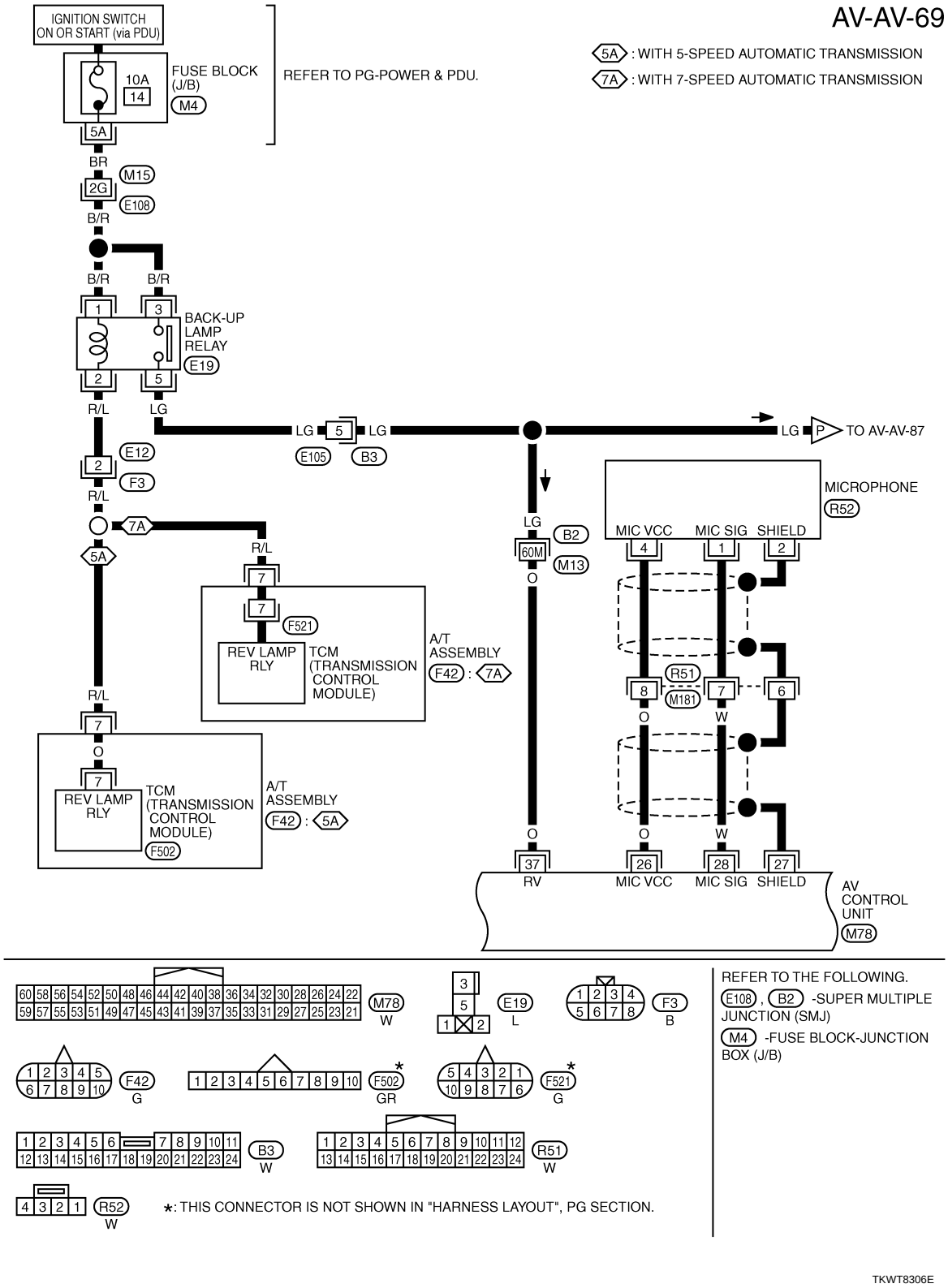
AV-AV-68





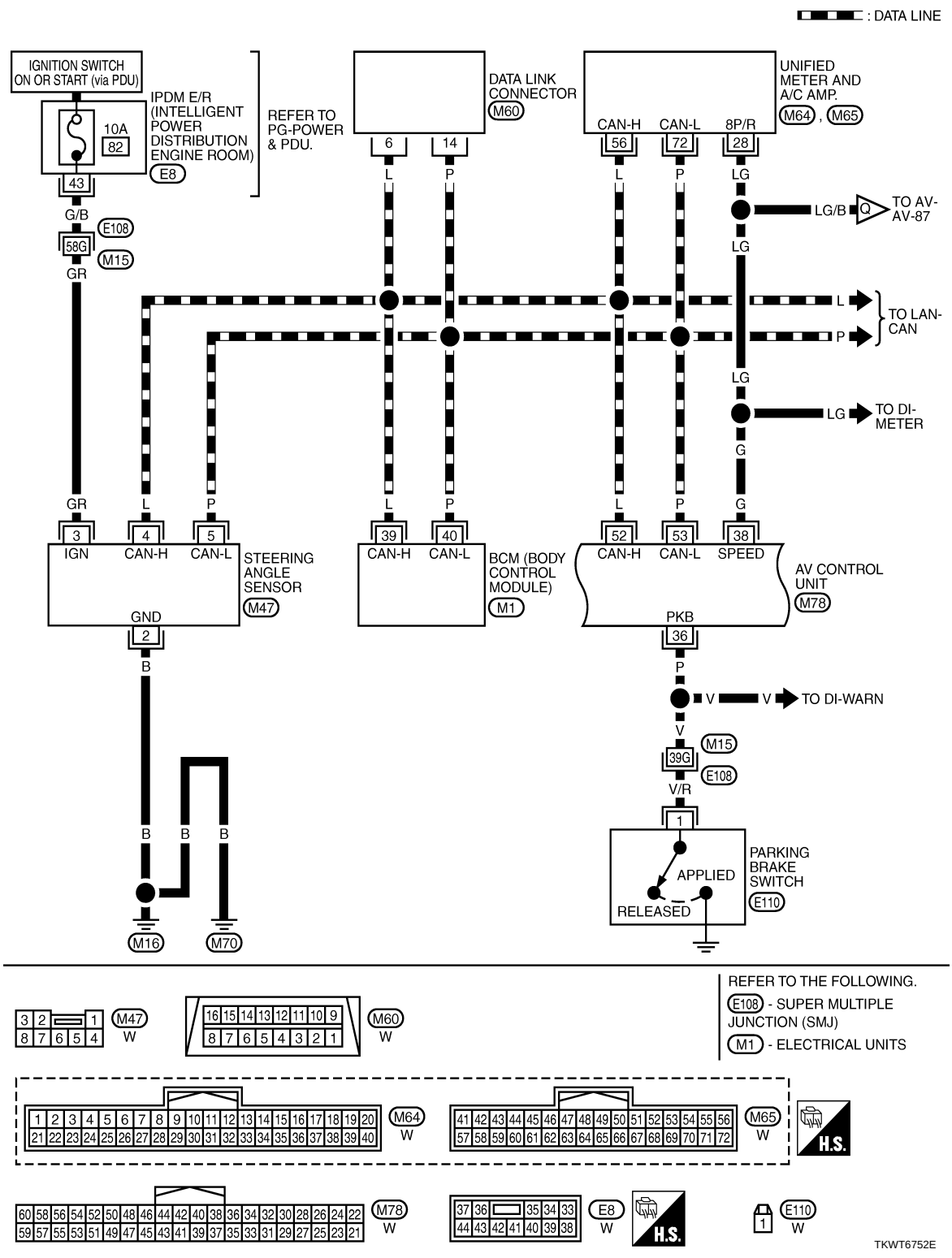
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8305E

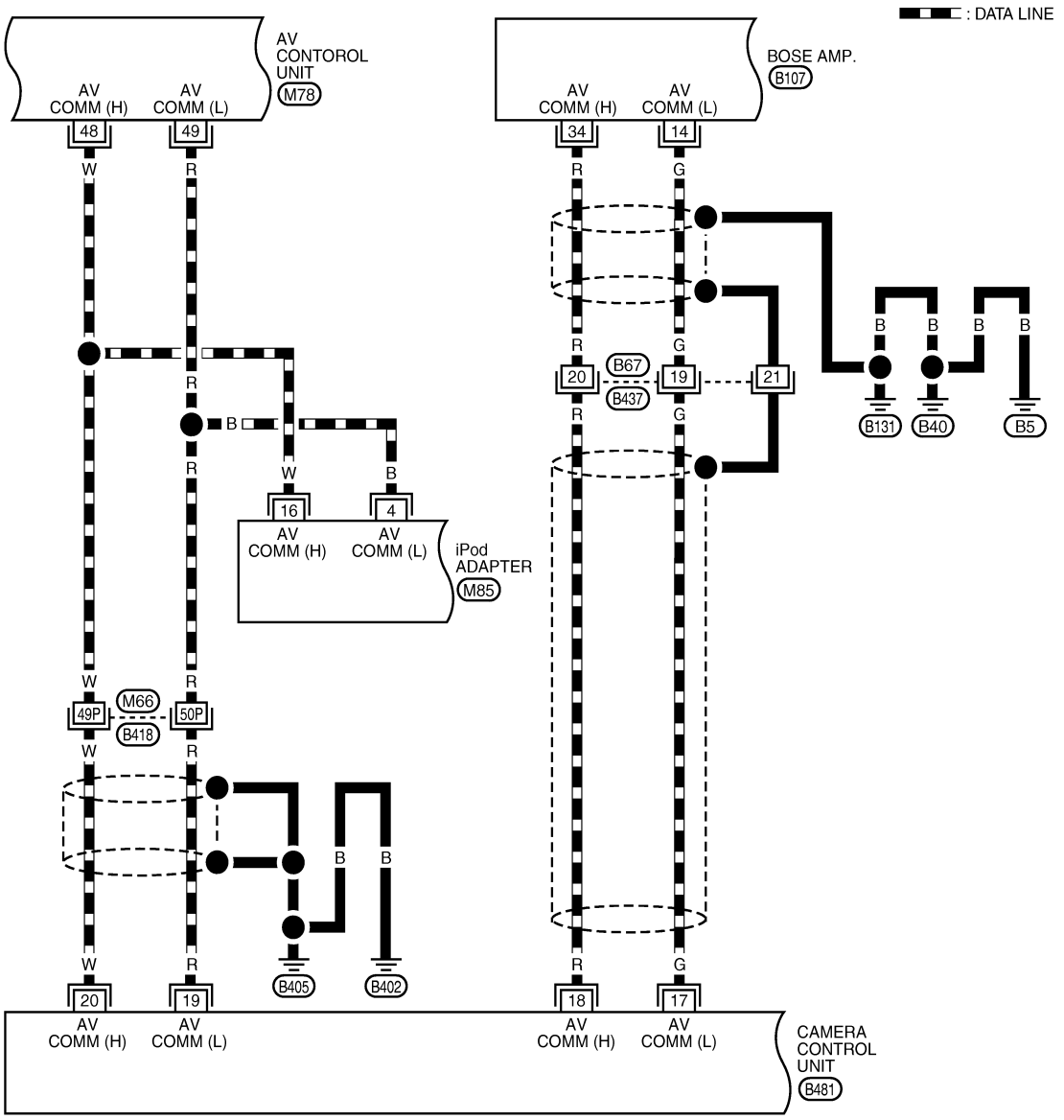

AV-AV-69
5A : WITH 5-SPEED AUTOMATIC TRANSMISSION
7A : WITH 7-SPEED AUTOMATIC TRANSMISSION
IGNITION SWITCH ON OR START (via PDU)
10A 14
FUSE BLOCK (J/B) M4
REFER TO PG-POWER & PDU.
5A
BR
2G M15
E108
B/R
B/R B/R
1 3
BACK-UP LAMP RELAY E19
2 5
R/L LG
LG 5 LG
E105 B3
LG P TO AV-AV-87
E12
2
F3
R/L
7A
5A
R/L
7
7
F521
REV LAMP RLY
TCM (TRANSMISSION CONTROL MODULE)
A/T ASSEMBLY F42 : 7A
R/L
7
O
7
REV LAMP RLY
TCM (TRANSMISSION CONTROL MODULE) F502
A/T ASSEMBLY F42 : 5A
LG
B2
60M M13
O
MICROPHONE R52
MIC VCC MIC SIG SHIELD
4 1 2
R51
8 M181 7 6
O W
O W
37 26 28 27
RV MIC VCC MIC SIG SHIELD
AV CONTROL UNIT M78
M78 W
E19 L
F3 B
F42 G
F502 GR
F521 G
B3 W
R51 W
R52 W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

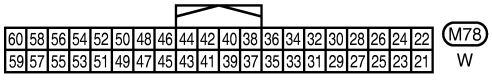
TKWT8306E

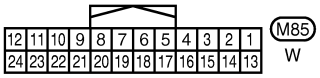
AV-AV-70

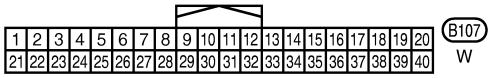

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56 72 28
G/B
E108
58G
M15
GR
LG/B Q TO AV-AV-87
LG
L
P
TO LAN-CAN
LG
LG TO DI-METER
G
GR L P L P L P G
3 4 5 39 40 52 53 38
IGN CAN-H CAN-L
STEERING ANGLE SENSOR M47
CAN-H CAN-L
BCM (BODY CONTROL MODULE) M1
CAN-H CAN-L SPEED
AV CONTROL UNIT M78
GND
2
PKB
36
B
P
V V TO DI-WARN
V
M15
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B B B
M16
M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47 W
M60 W
M64 W
M65 W
H.S.
M78 W
E8 W
E110 W
TKWT6752E

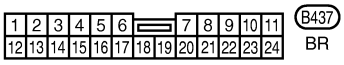
AV-AV-71

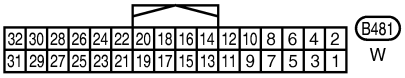








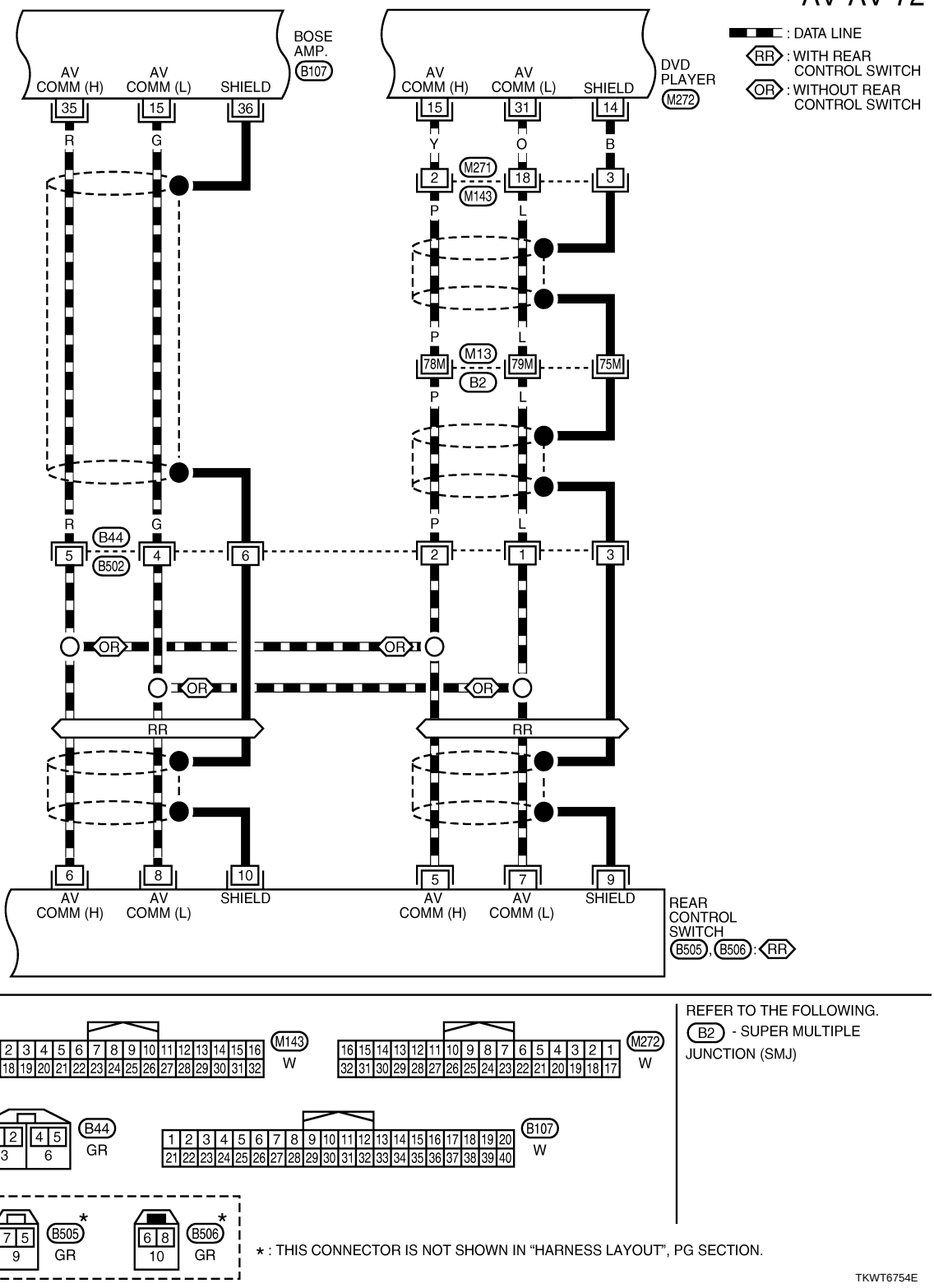




REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6753E

AV-AV-72

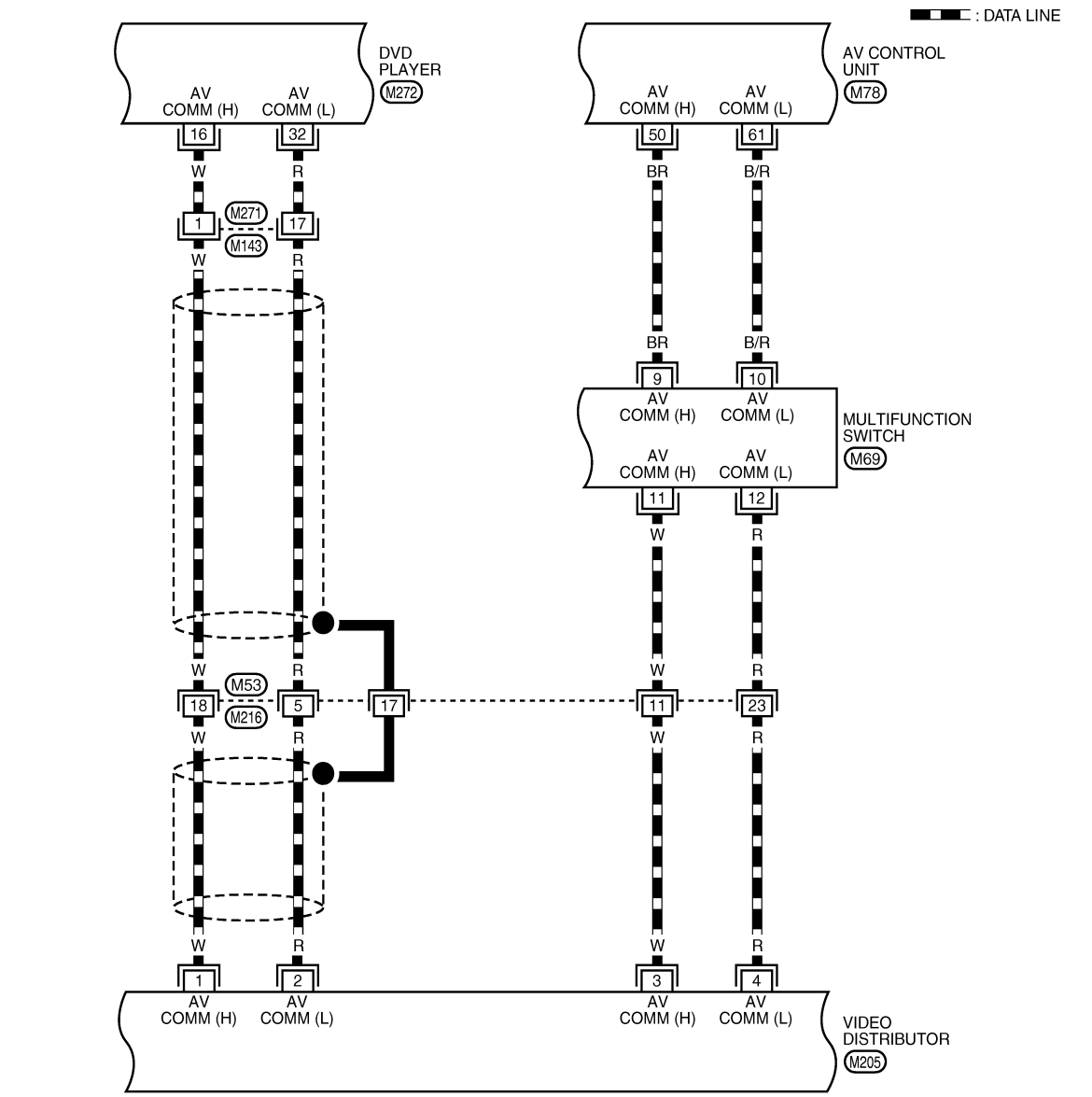


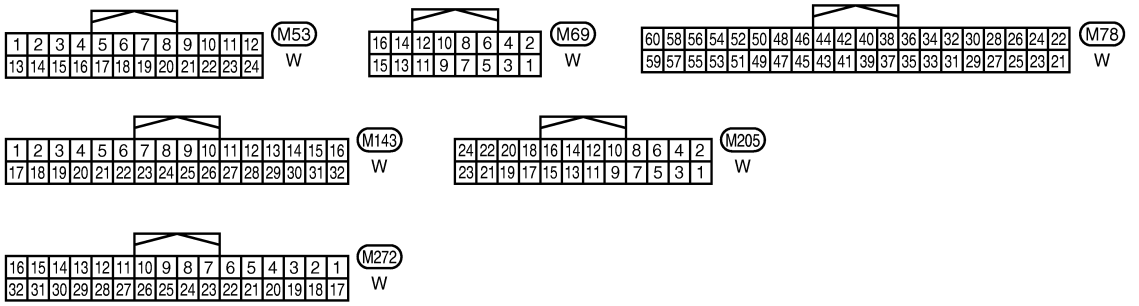
REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.

TKWT6754E

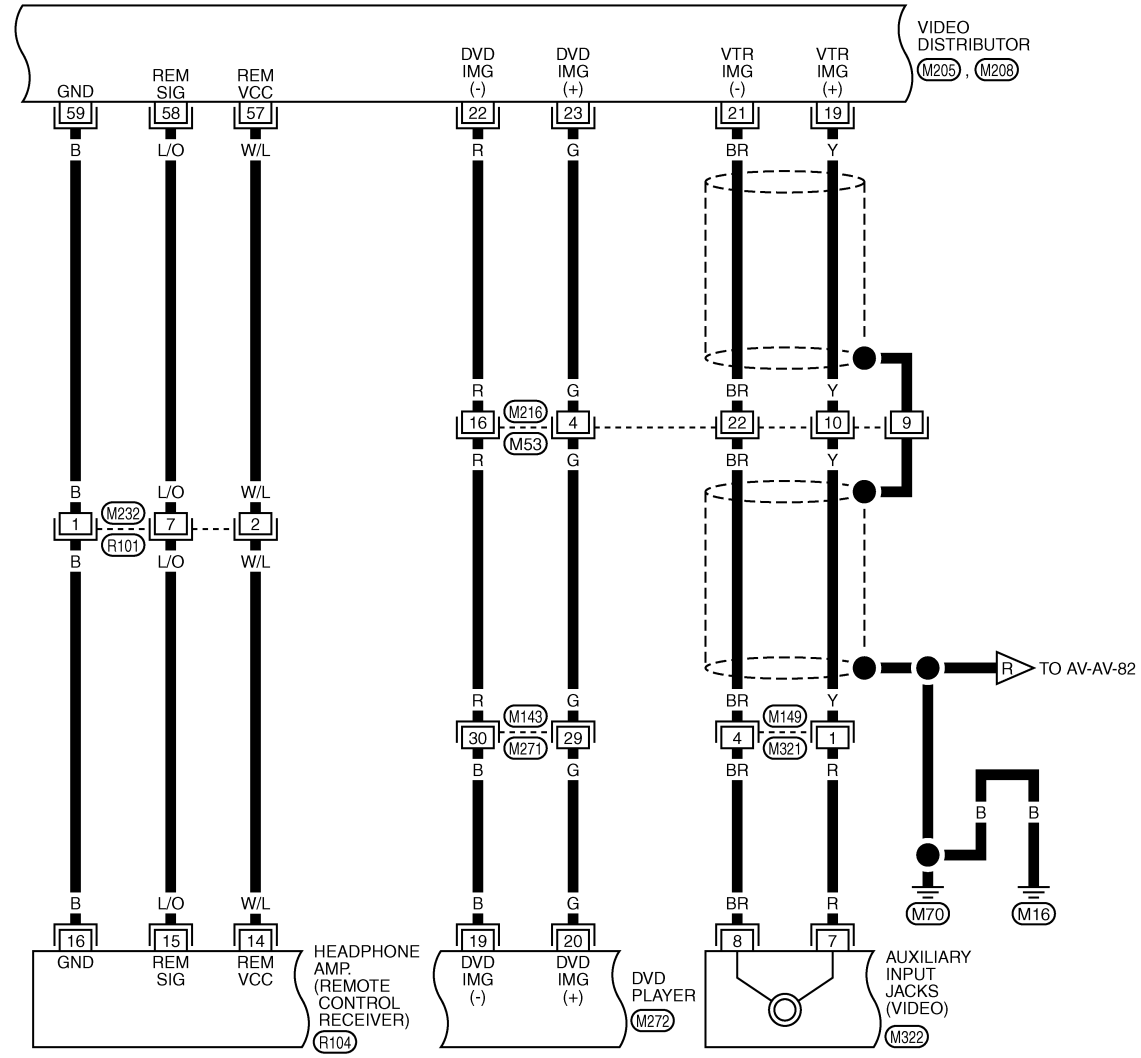
AV-AV-73





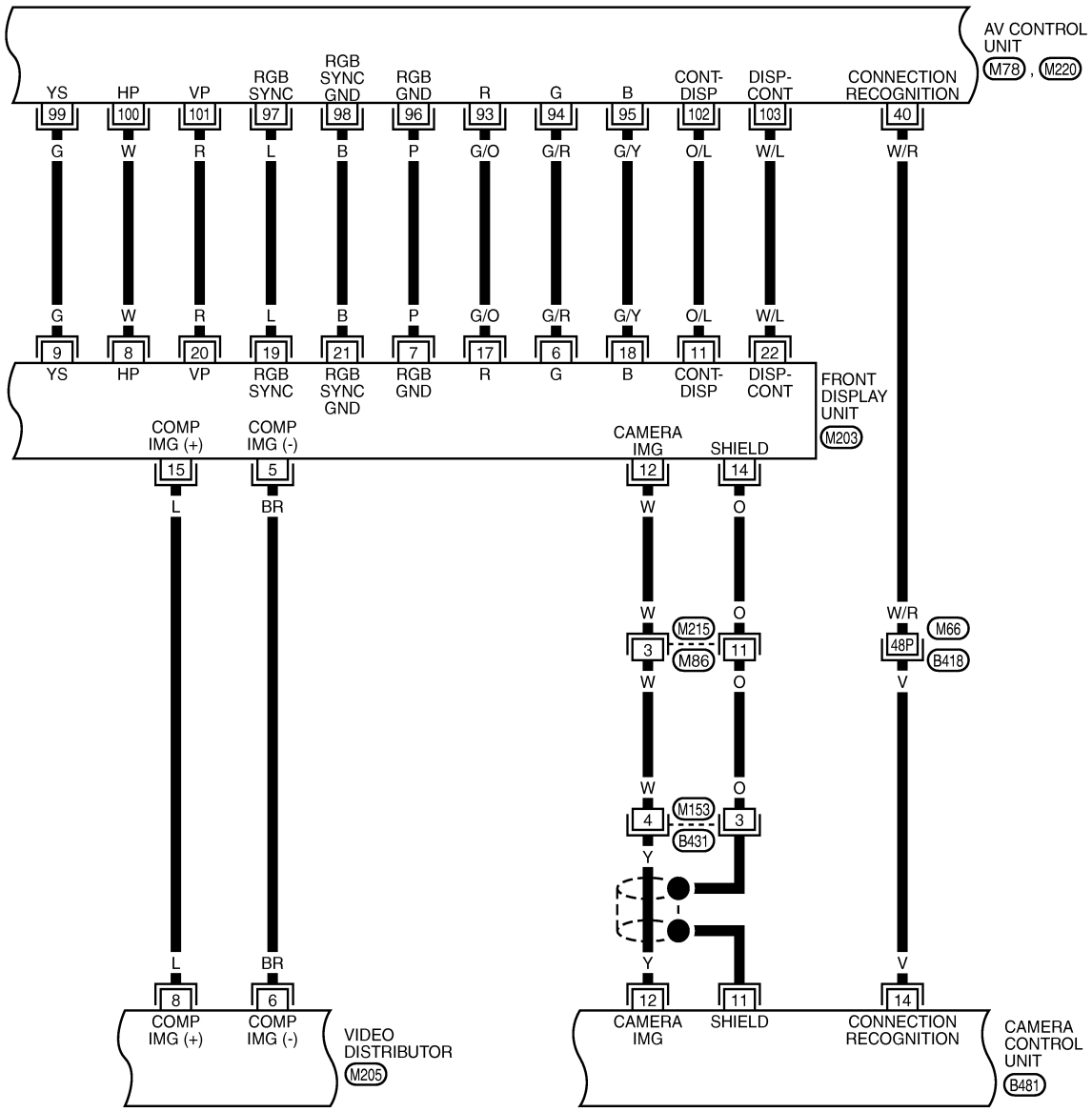
TKWT6755E

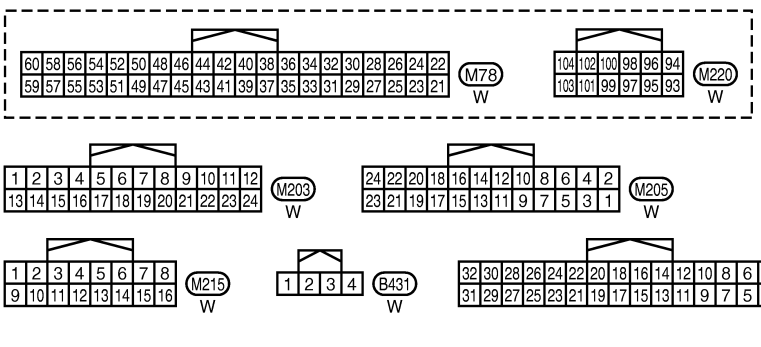
AV-AV-74



TKWT8307E

AV-AV-75

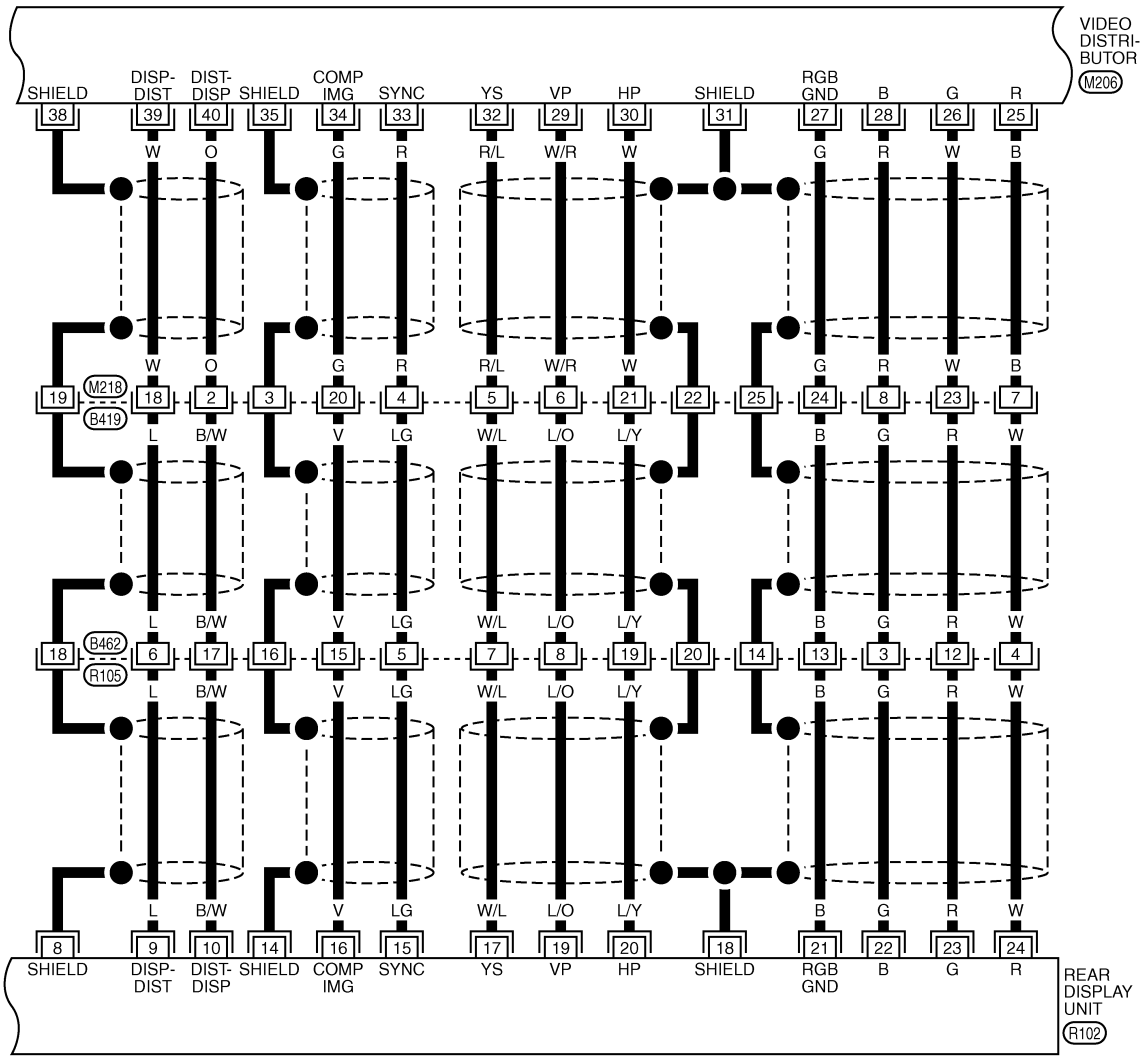


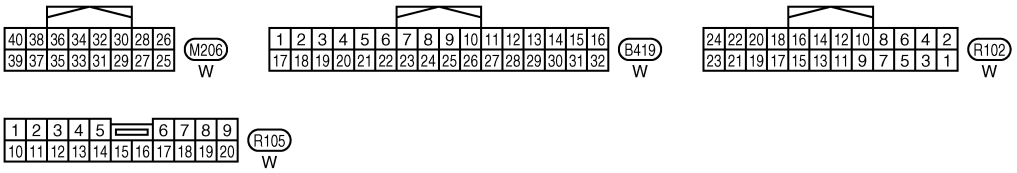


REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT6757E

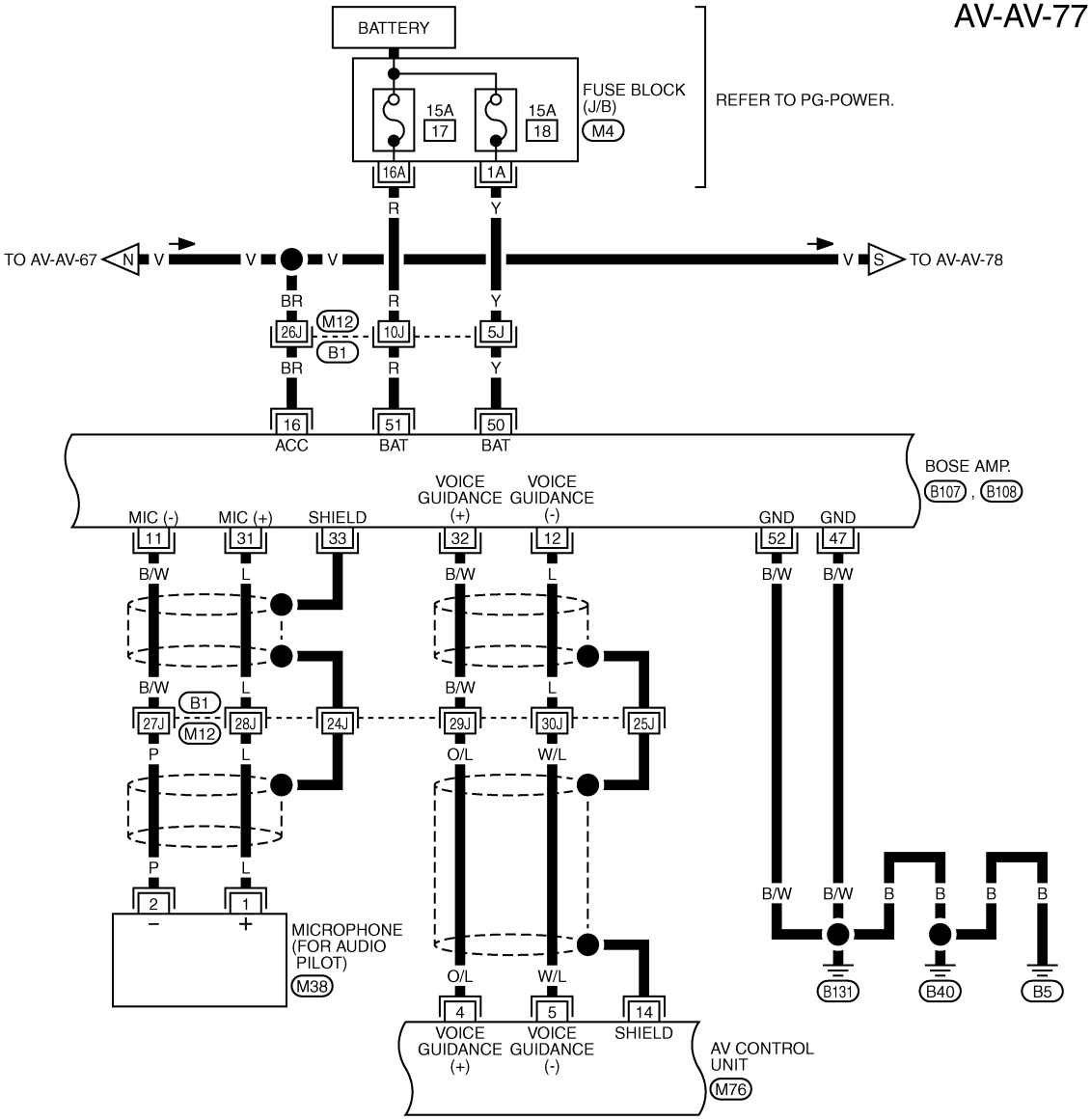
AV-AV-76

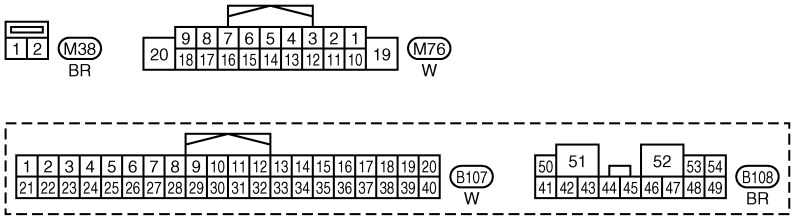




TKWT5152E

AV-AV-77



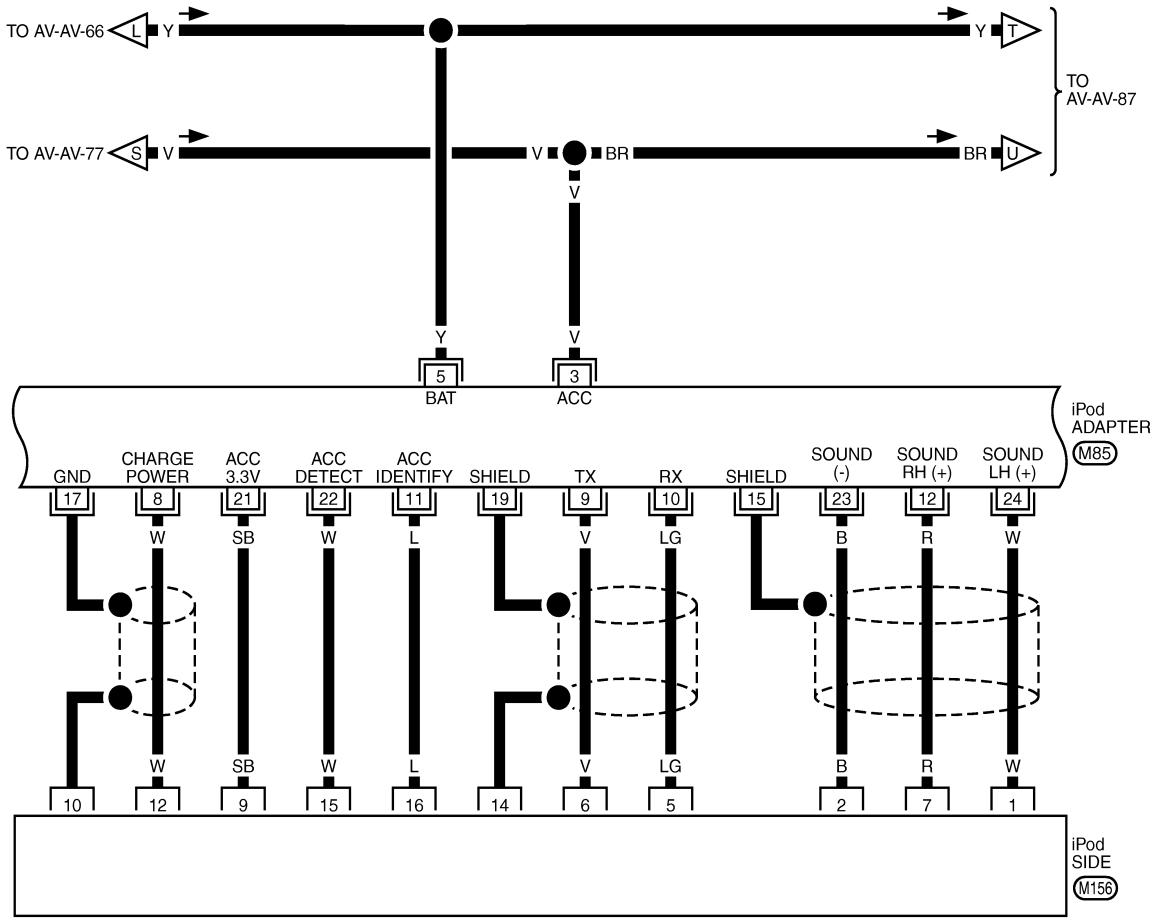


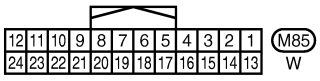
REFER TO THE FOLLOWING.

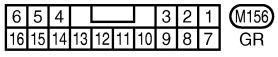
B1 -SUPER MULTIPLE JUNCTION (SMJ)

M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8308E

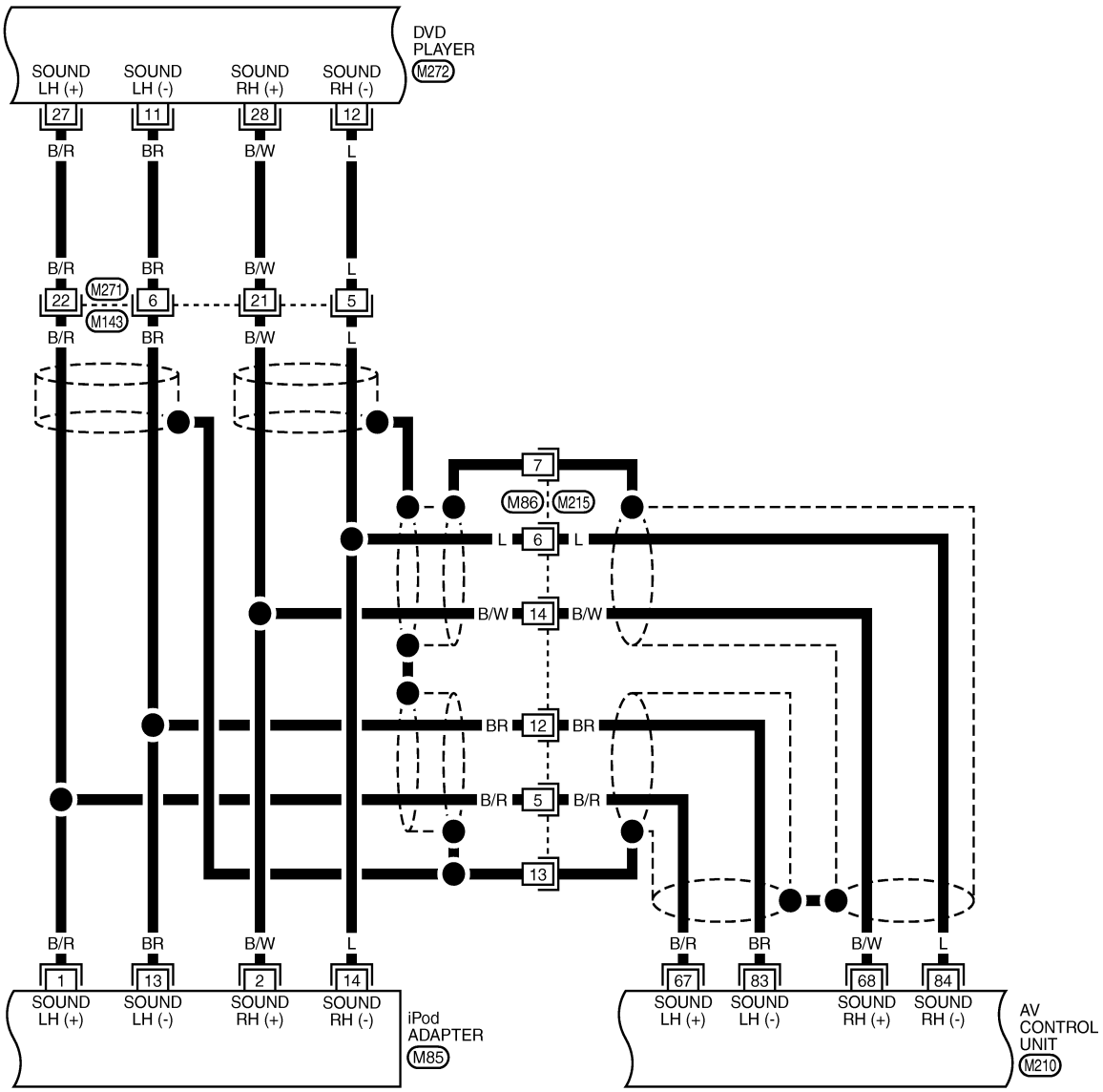

TO AV-AV-66
L
Y
Y
T
TO AV-AV-87
TO AV-AV-77
S
V
V
BR
BR
U
V
Y
V
5
BAT
3
ACC
iPod ADAPTER
M85
GND
CHARGE POWER
ACC 3.3V
ACC DETECT
ACC IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND (-)
SOUND RH (+)
SOUND LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod SIDE
M156

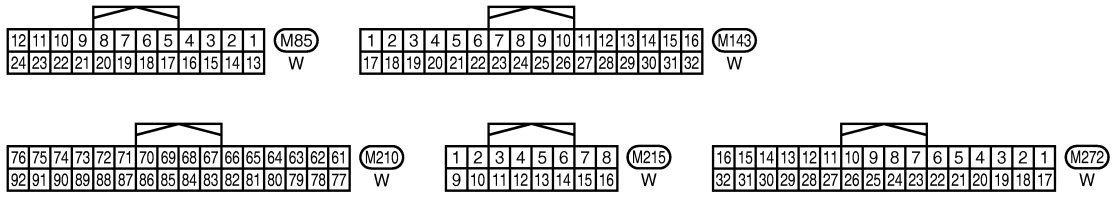

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6761E

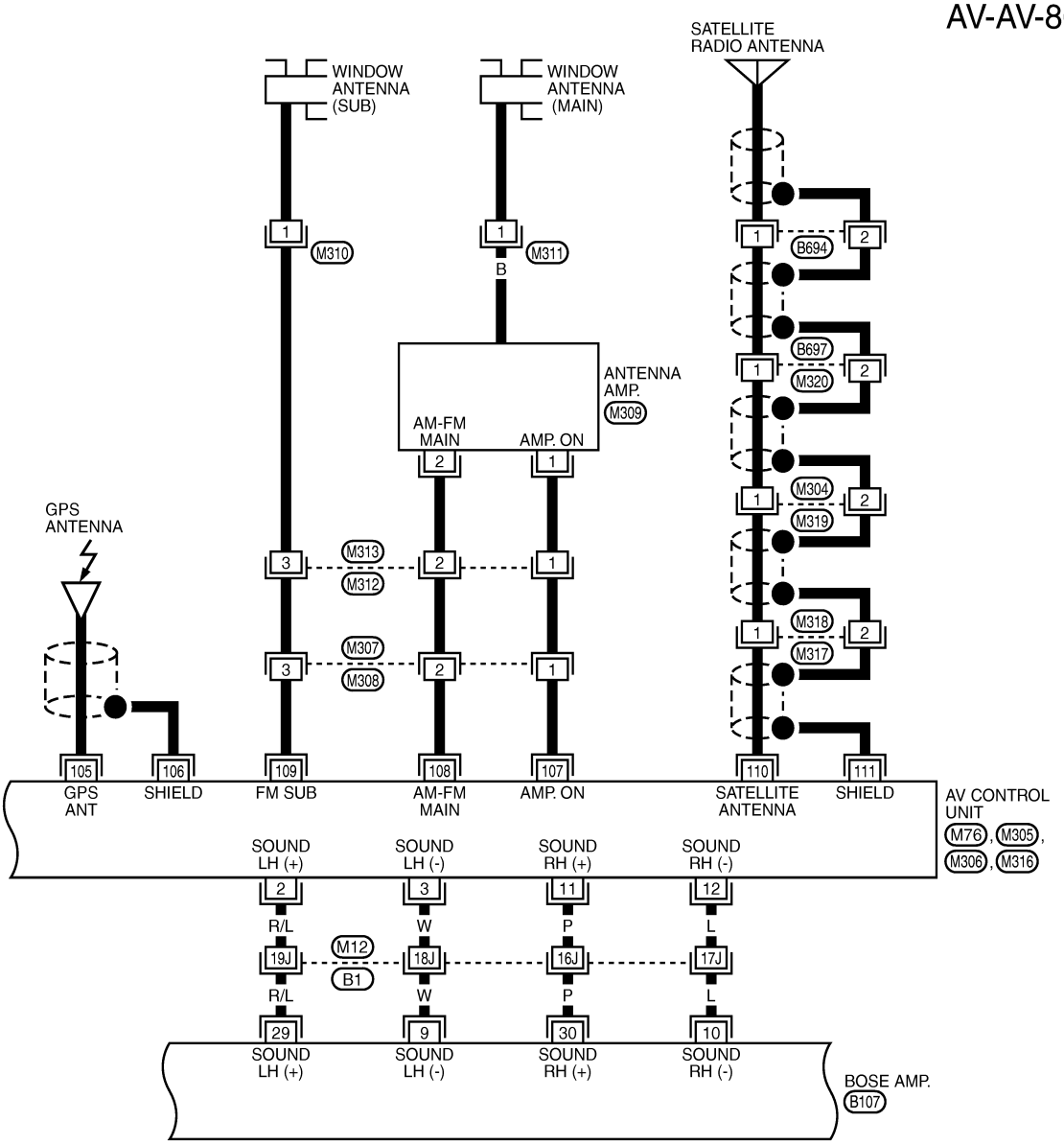
AV-AV-79

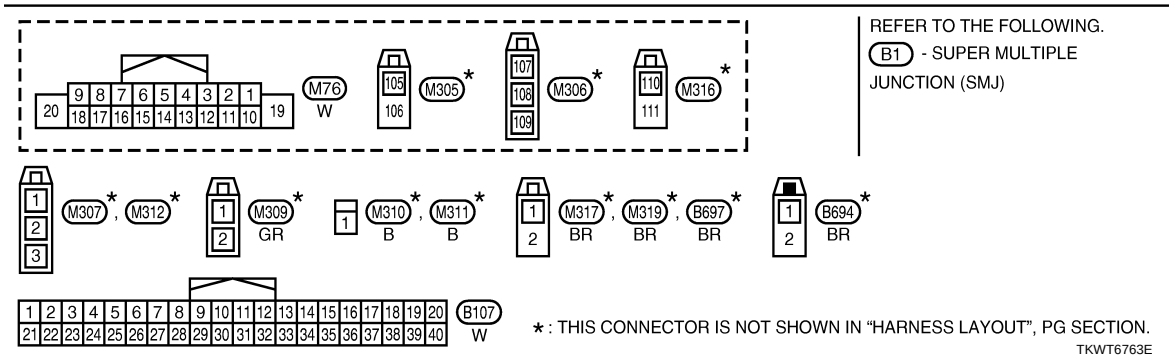




TKWT6762E

AV-AV-80



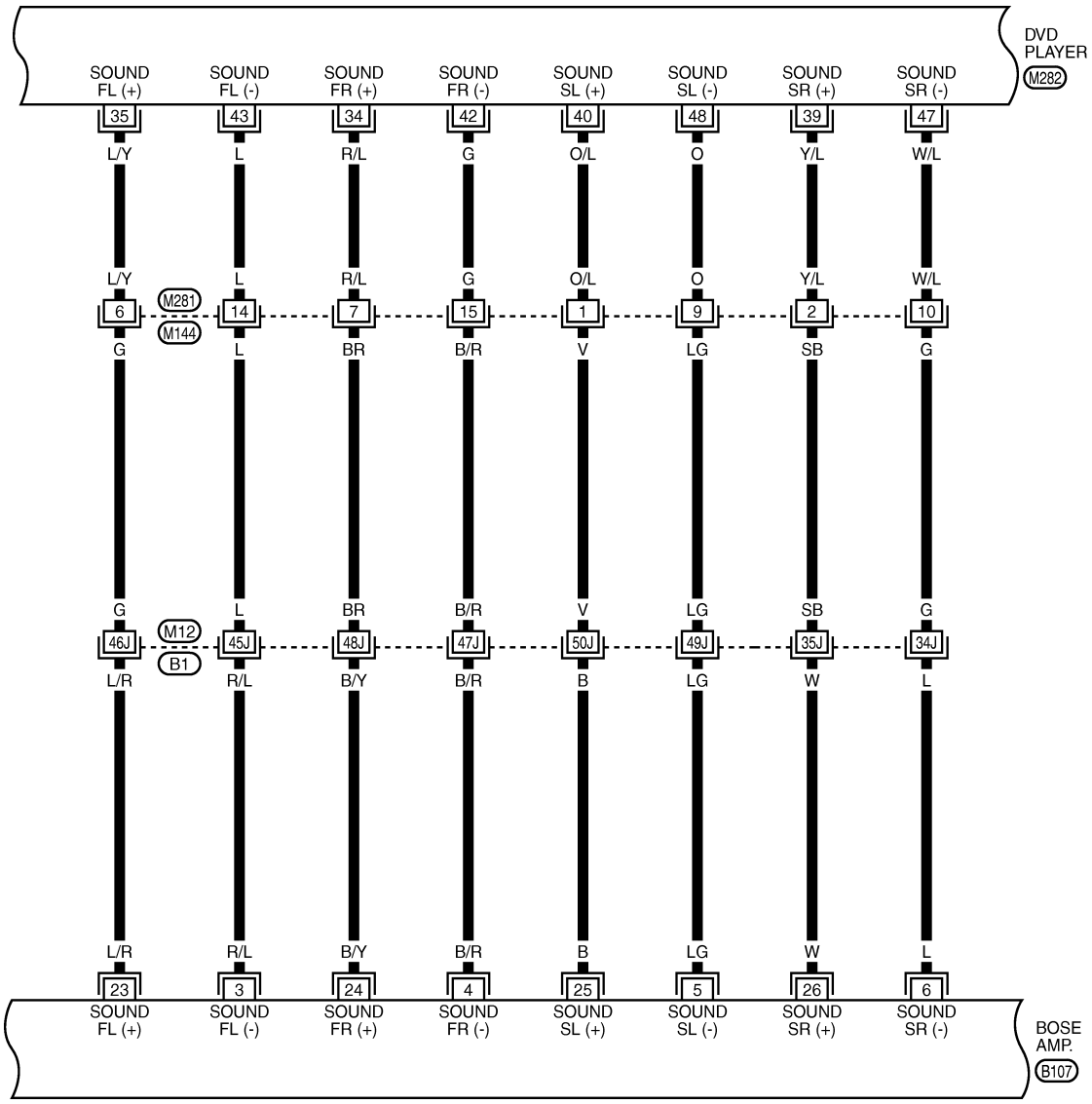


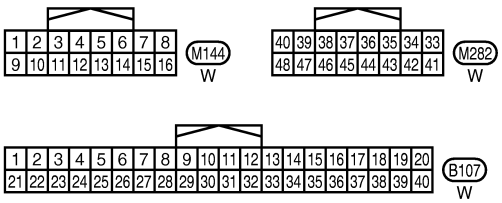
REFER TO THE FOLLOWING.
(B1) - SUPER MULTIPLE JUNCTION (SMJ)

* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.

TKWT6763E

AV-AV-81

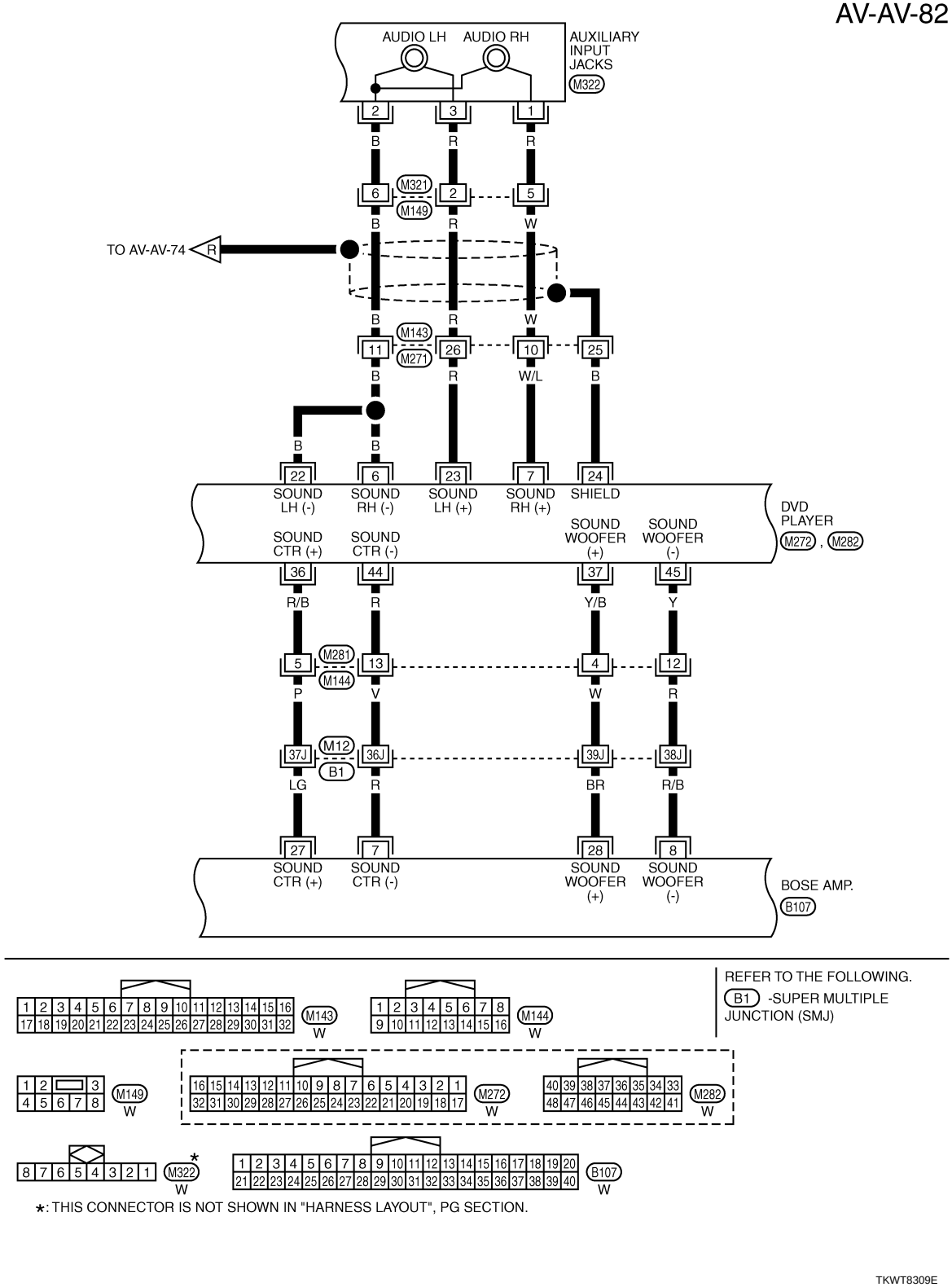




REFER TO THE FOLLOWING.
(B1) - SUPER MULTIPLE JUNCTION (SMJ)

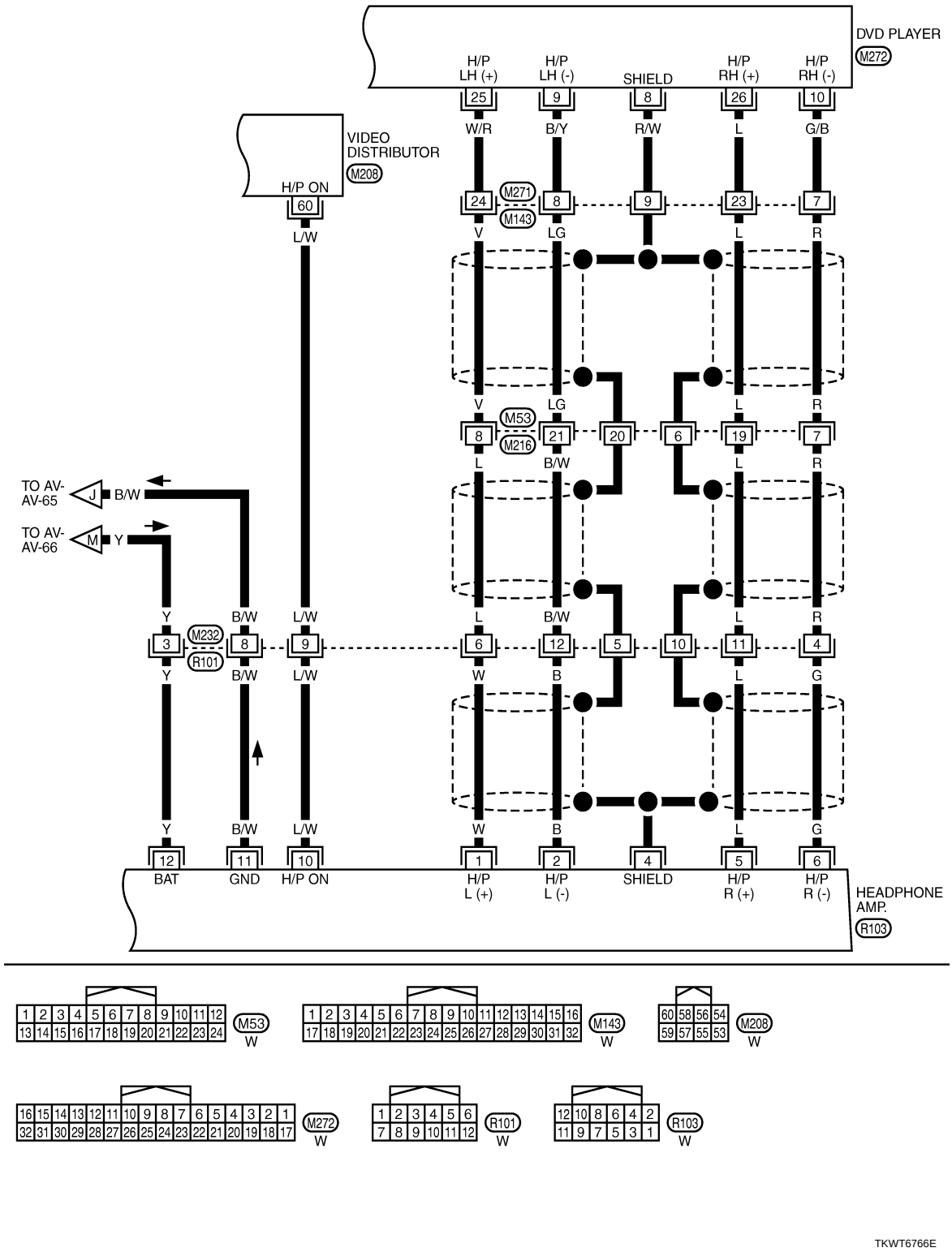
TKWT6764E

AV-AV-82



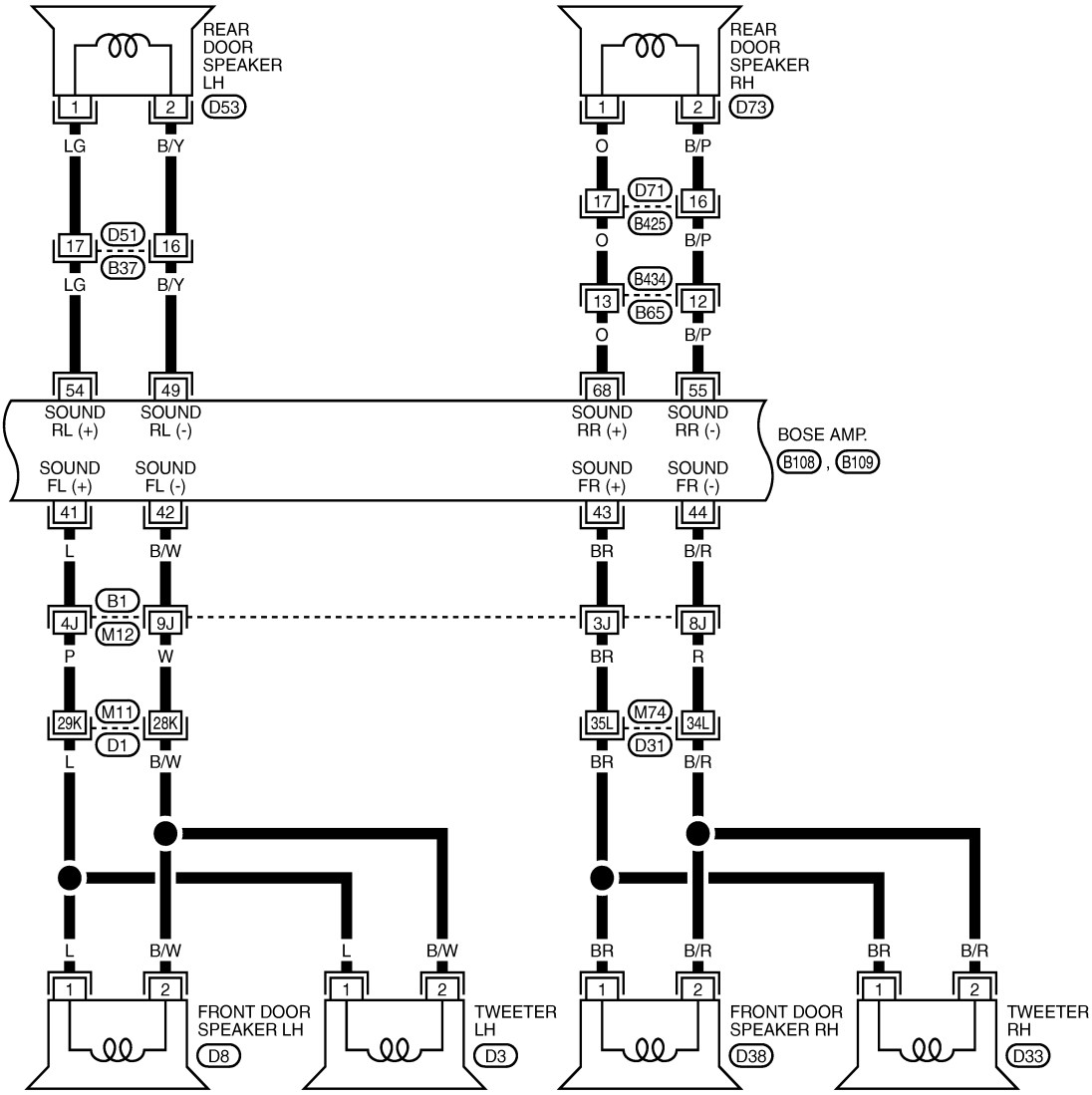
TKWT8309E

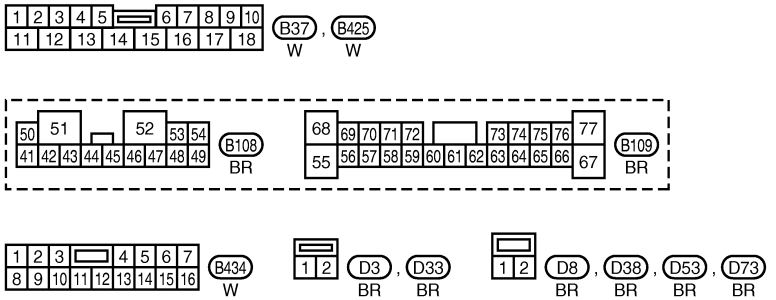
AV-AV-83



TKWT6766E

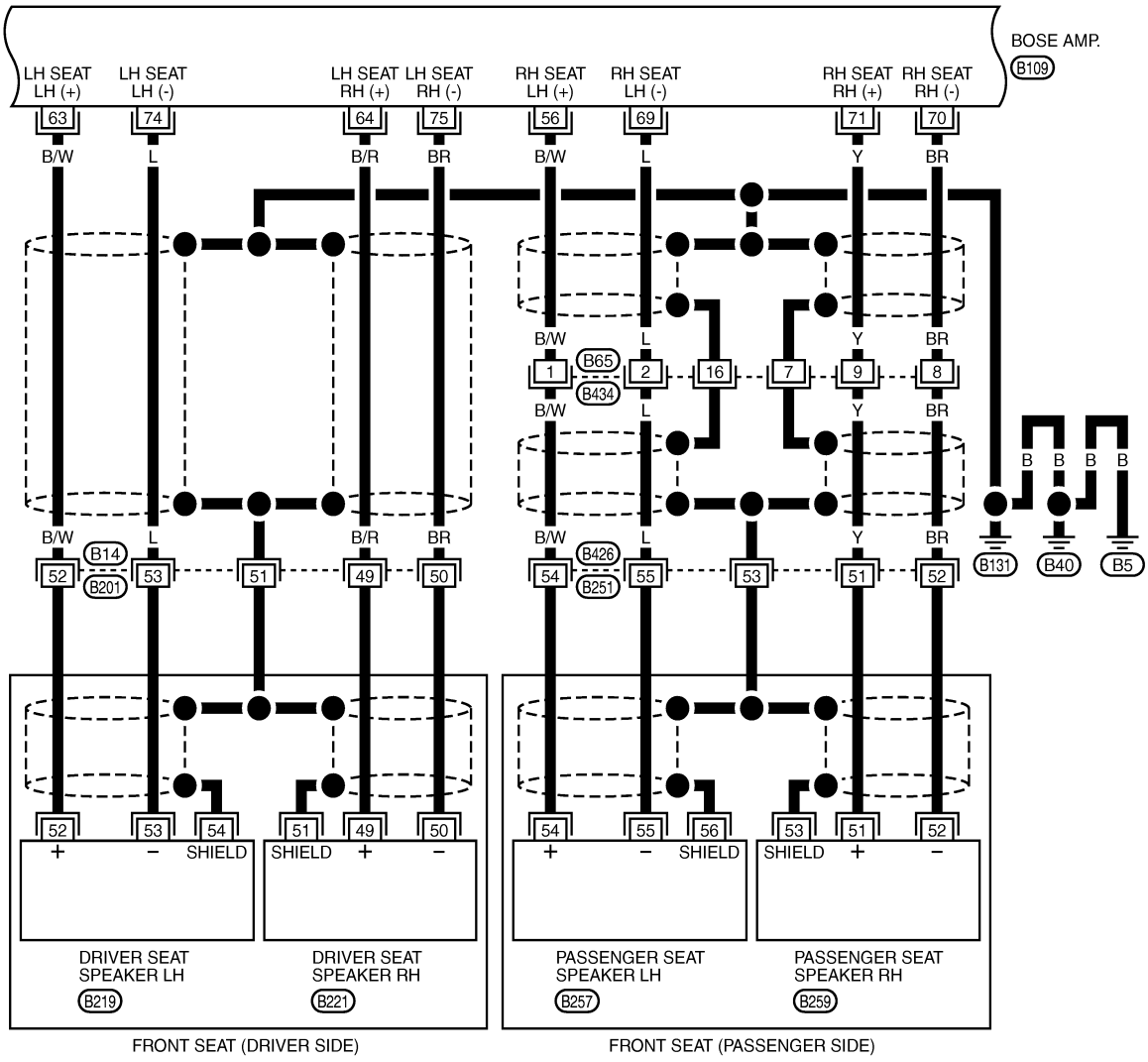
AV-AV-84

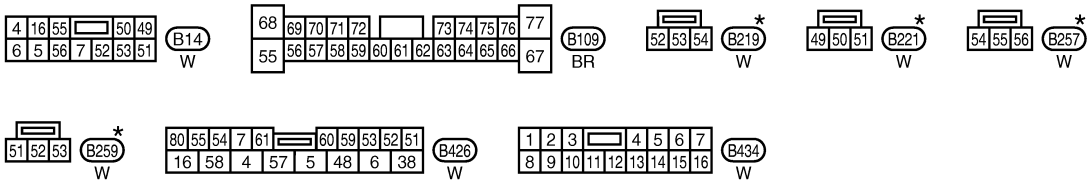




REFER TO THE FOLLOWING.
B1 , D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6767E

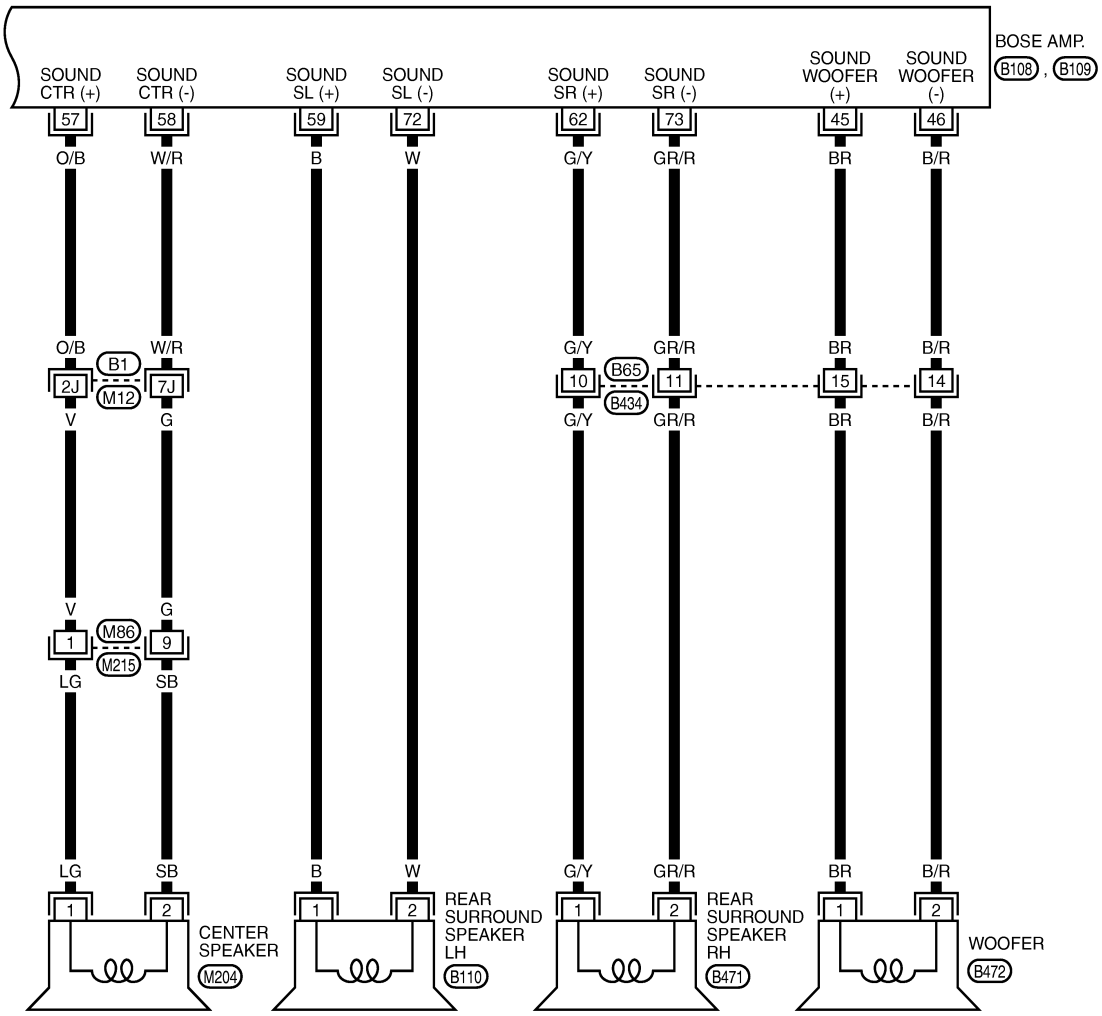


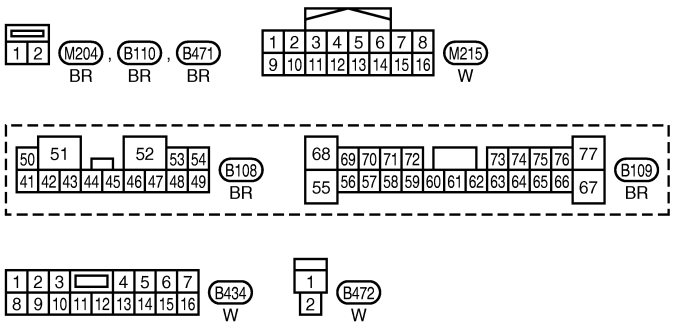


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6768E

AV-AV-86

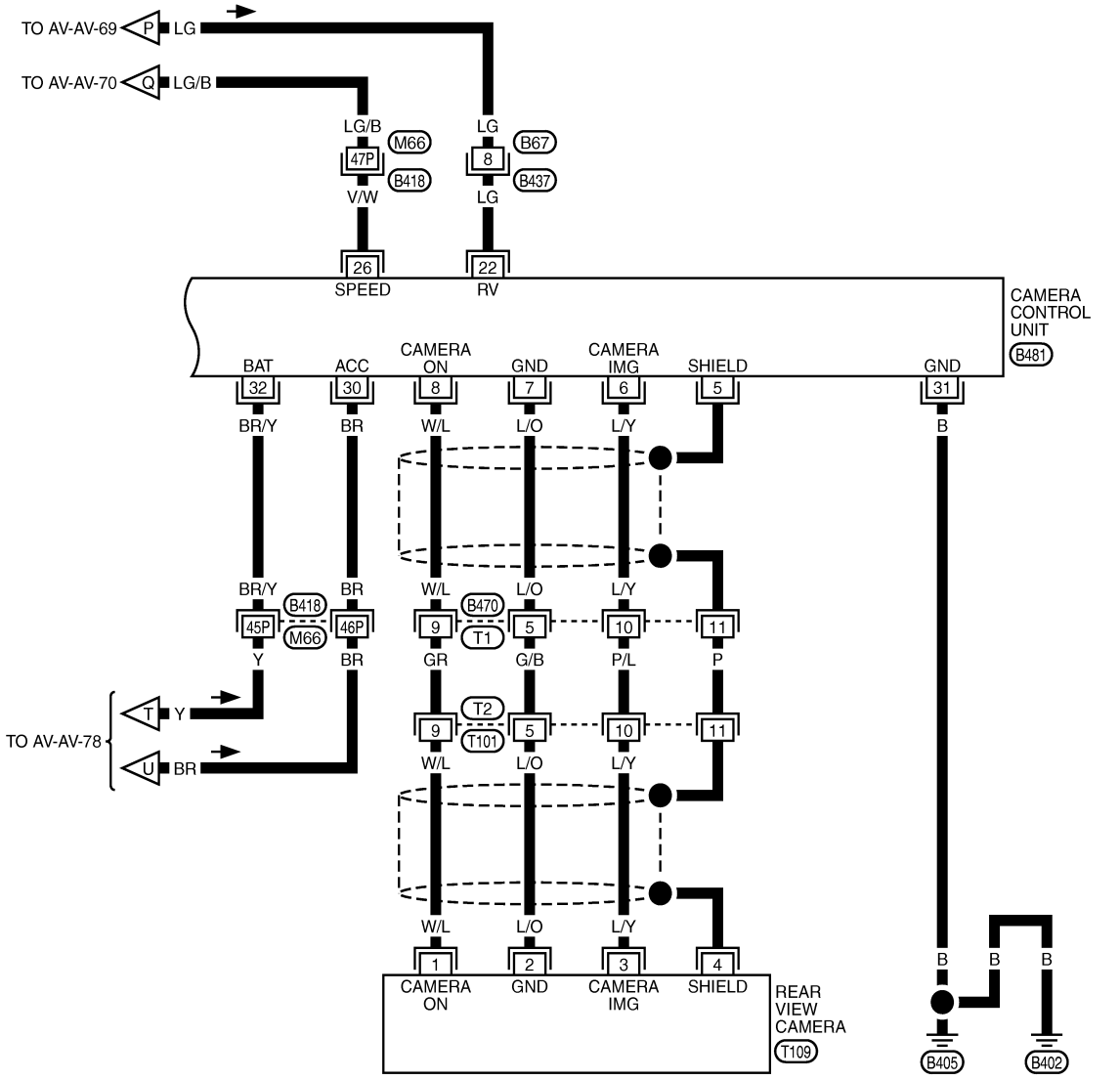


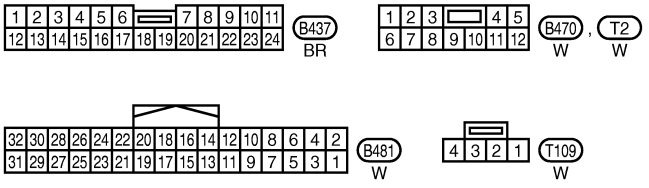


REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6769E

AV-AV-87





REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

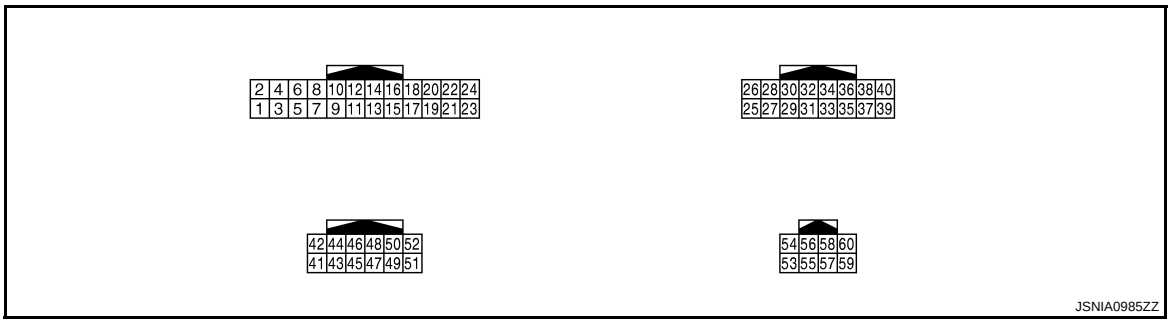
TKWT6770E

VIDEO DISTRIBUTOR

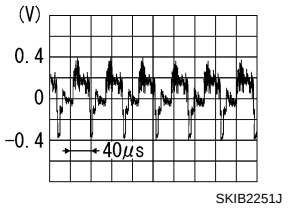
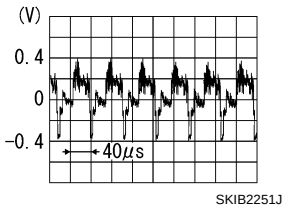
Reference Value

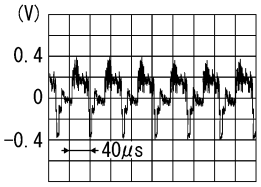
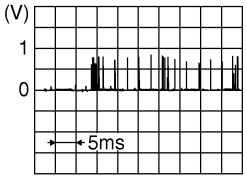
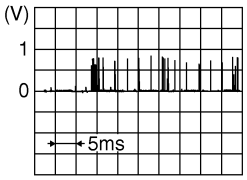
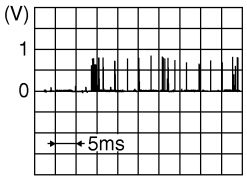
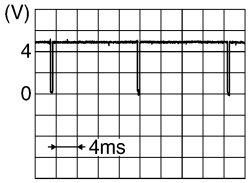
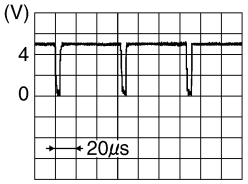
INFOID:0000000004156085

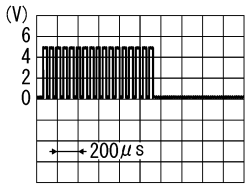
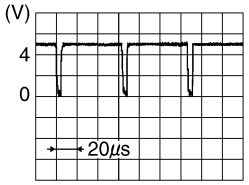
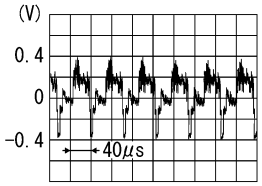
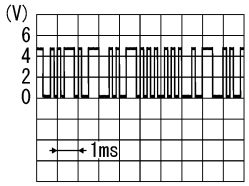
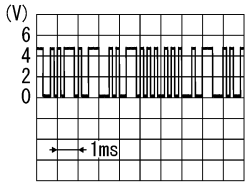
TERMINAL LAYOUT

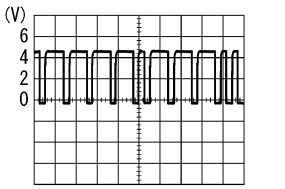


PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (W)	—	AV communication signal (H)	Input/ Output	—	—	—
2 (R)	—	AV communication signal (L)	Input/ Output	—	—	—
3 (W)	—	AV communication signal (H)	Input/ Output	—	—	—
4 (R)	—	AV communication signal (L)	Input/ Output	—	—	—
8 (L)	6 (BR)	Composite image signal for front display unit	Output	Ignition switch ON	When AUX or DVD image is displayed on front display unit.	 SKIB2251J
15 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
16 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
19 (Y)*1 (R)*2	21 (BR)	AUX image signal	Input	Ignition switch ON	When AUX image is displayed.	 SKIB2251J

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
23 (G)	22 (R)*1 (B)*2	DVD image signal	Input	Ignition switch ON	When DVD image is displayed.	 SKIB2251J
25 (B)	Ground	RGB signal (R: red) for rear display unit	Output	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA0984ZZ
26 (W)	Ground	RGB signal (G: green) for rear display unit	Output	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA0984ZZ
27 (G)	Ground	RGB ground for rear display unit	—	Ignition switch ON	—	0 V
28 (R)	Ground	RGB signal (B: blue) for rear display unit	Output	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA0984ZZ
29 (W/R)	Ground	Vertical synchronizing (VP) signal for rear display unit	Input	Ignition switch ON	—	 SKIB3598E
30 (W)	Ground	Horizontal synchronizing (HP) signal for rear display	Input	Ignition switch ON	—	 SKIB0825E
31	—	Shield	—	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
32 (R/L)	Ground	RGB area (YS) signal for rear display	Output	Ignition switch ON	When AUX or DVD image is displayed on rear display unit.	0 V
					Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 PKIB4948J
33 (R)	Ground	Composite image synchronizing signal for rear display	Output	Ignition switch ON	When AUX or DVD image is displayed on rear display unit.	 SKIB0825E
34 (G)	Ground	Composite image signal for rear display unit	Output	Ignition switch ON	When AUX or DVD image is displayed on rear display unit.	 SKIB2251J
35	—	Shield	—	—	—	—
36 (O)	Ground	Ignition signal	Output	Ignition switch ON	—	0 V
				Ignition switch ACC	—	5 V
38	—	Shield	—	—	—	—
39 (W)	Ground	Communication signal (DISP→DIST)	Input	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 PKIB5039J
40 (O)	Ground	Communication signal (DIST→DISP)	Output	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 PKIB5039J
51 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

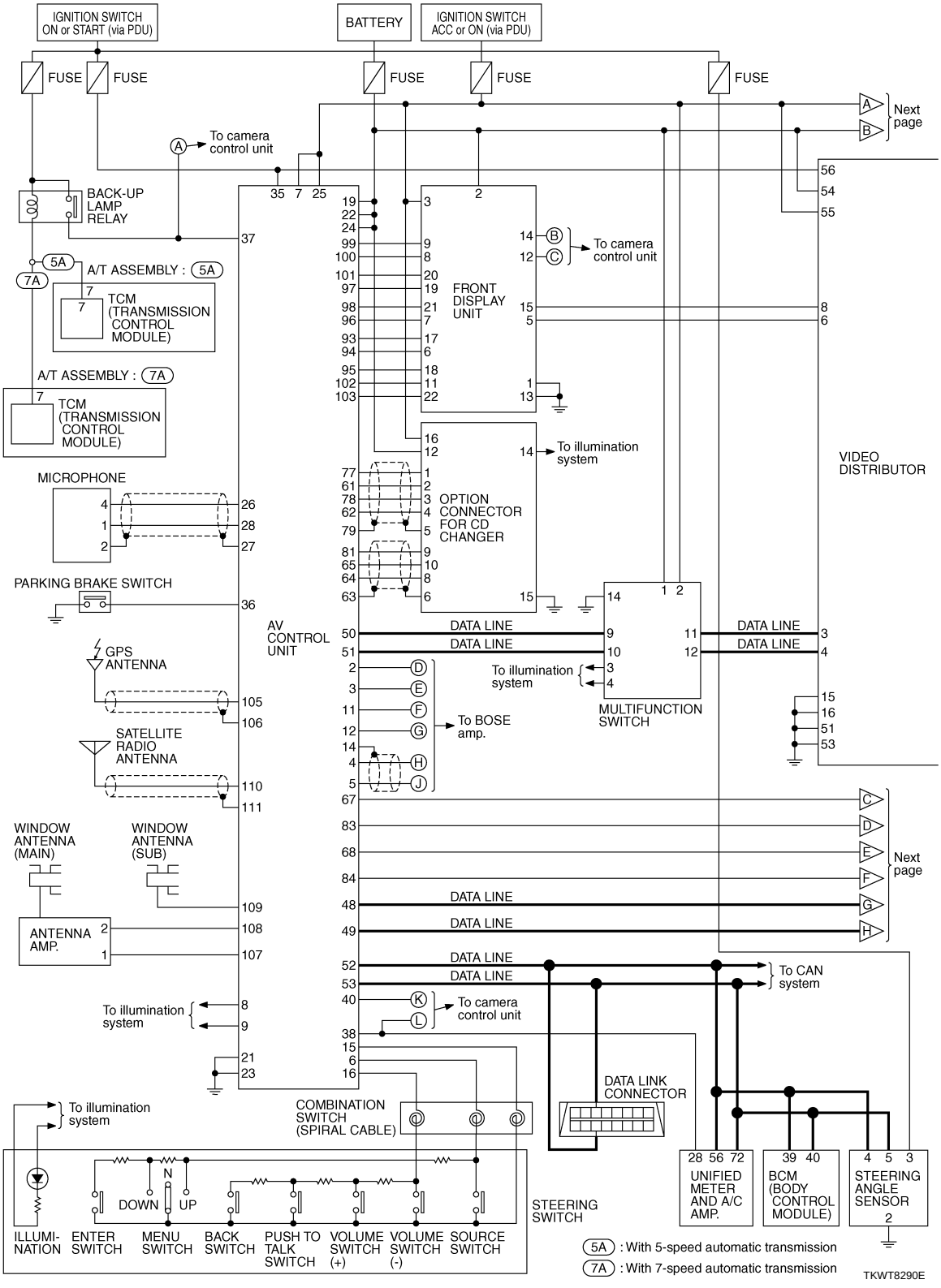
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
53 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
54 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
55 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
56 (G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
57 (W/L)	Ground	Remote control receiver VCC	Output	Ignition switch ON	—	5 V
58 (L/O)	Ground	Remote control signal	Input	Ignition switch ON	Rear seat remote controller operation.	 PKIB6988J
59 (B)	Ground	Headphone amp. ground	—	Ignition switch ON	—	0 V
60 (L/W)	Ground	Headphone amp. ON signal	Output	Ignition switch ON	Headphone mode is ON.	4 V
					Headphone mode is OFF.	0 V

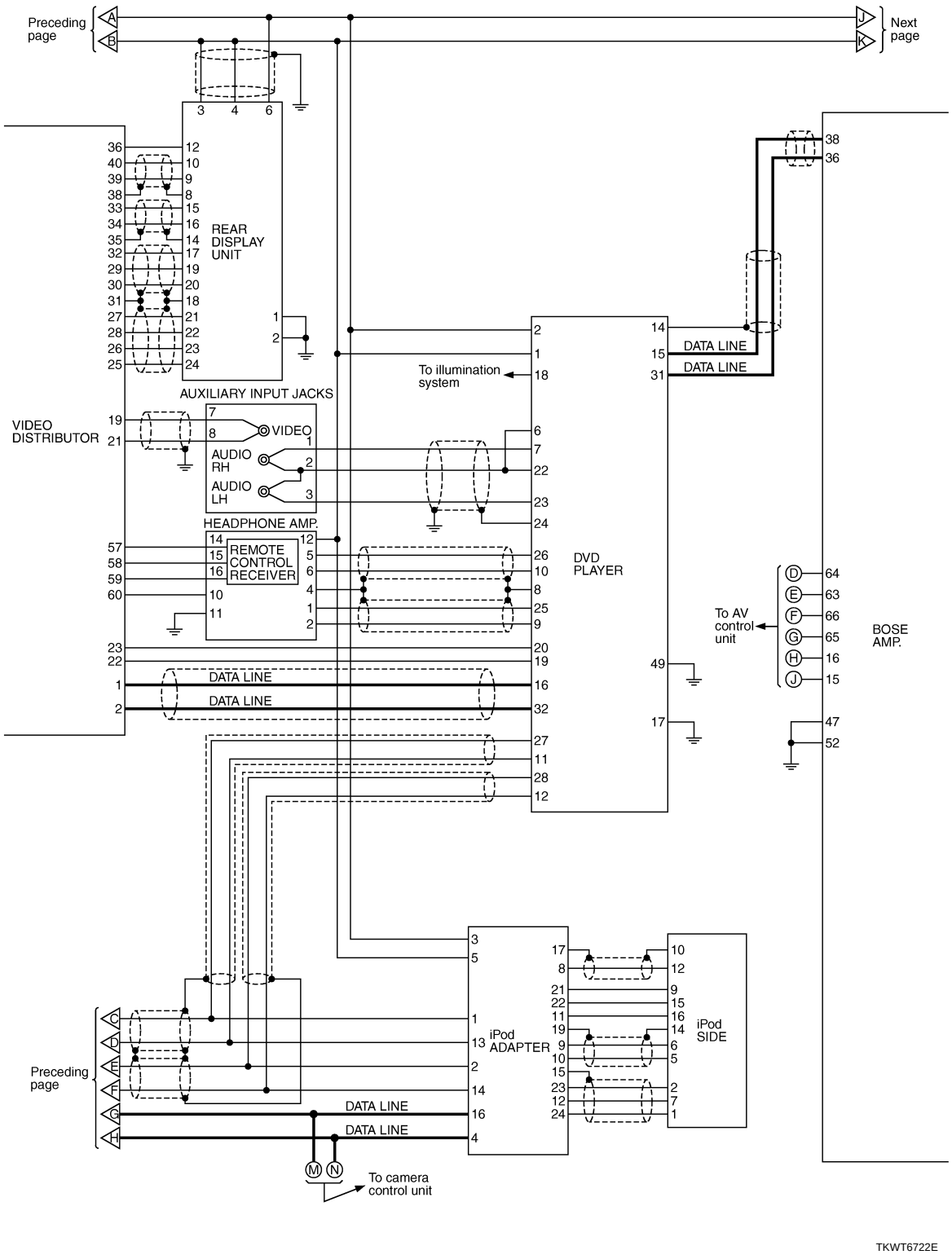
*1: BOSE surround audio 5.1ch system models.

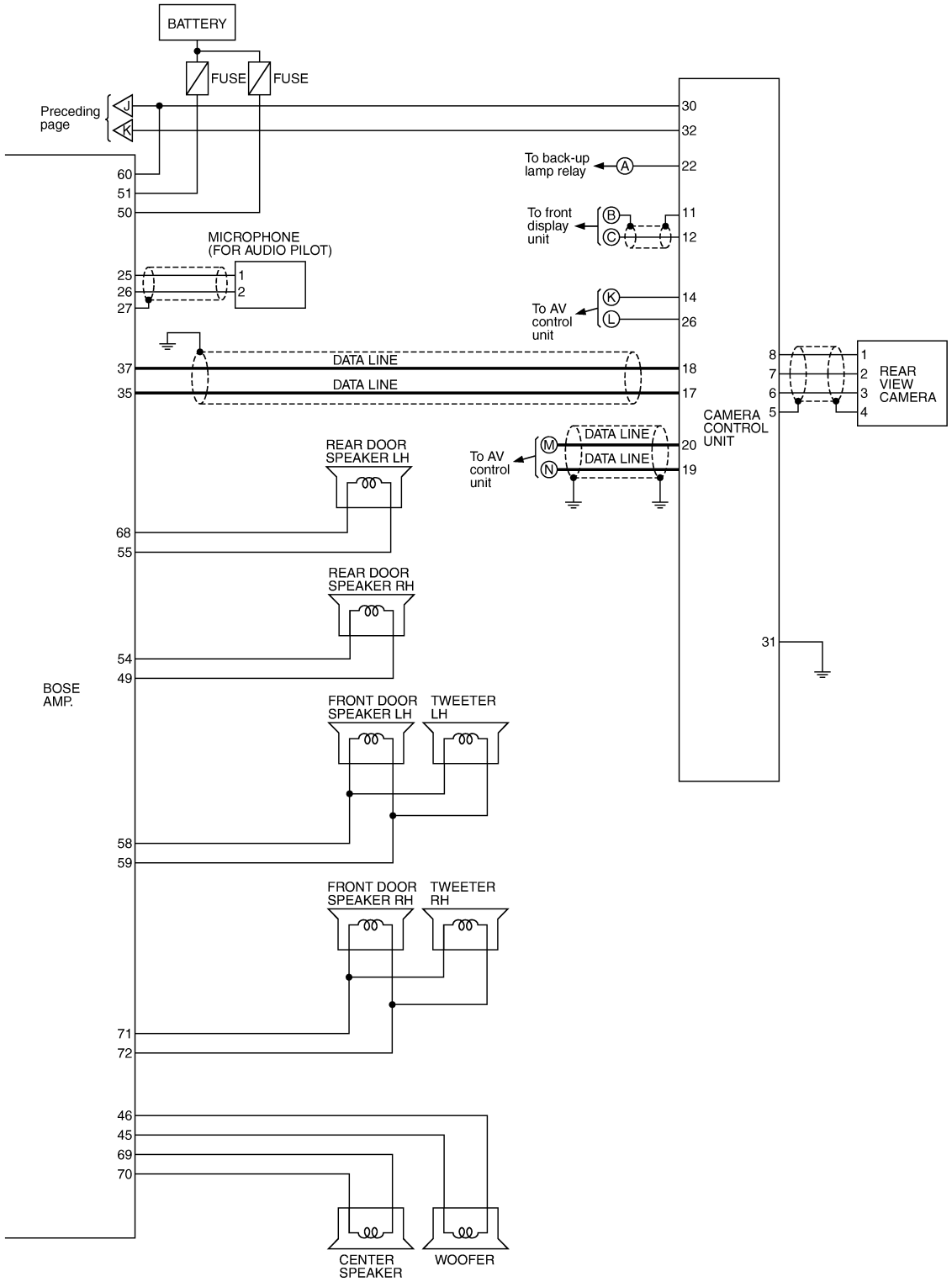
*2: BOSE 2ch system models.

Schematic - BOSE Audio 2ch System-

INFOID:0000000004391602




Preceding page
Next page
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
To illumination system
DVD PLAYER
DATA LINE
DATA LINE
DATA LINE
To AV control unit
BOSE AMP.
iPod ADAPTER
iPod SIDE
DATA LINE
DATA LINE
To camera control unit
TKWT6722E



TKWT6723E

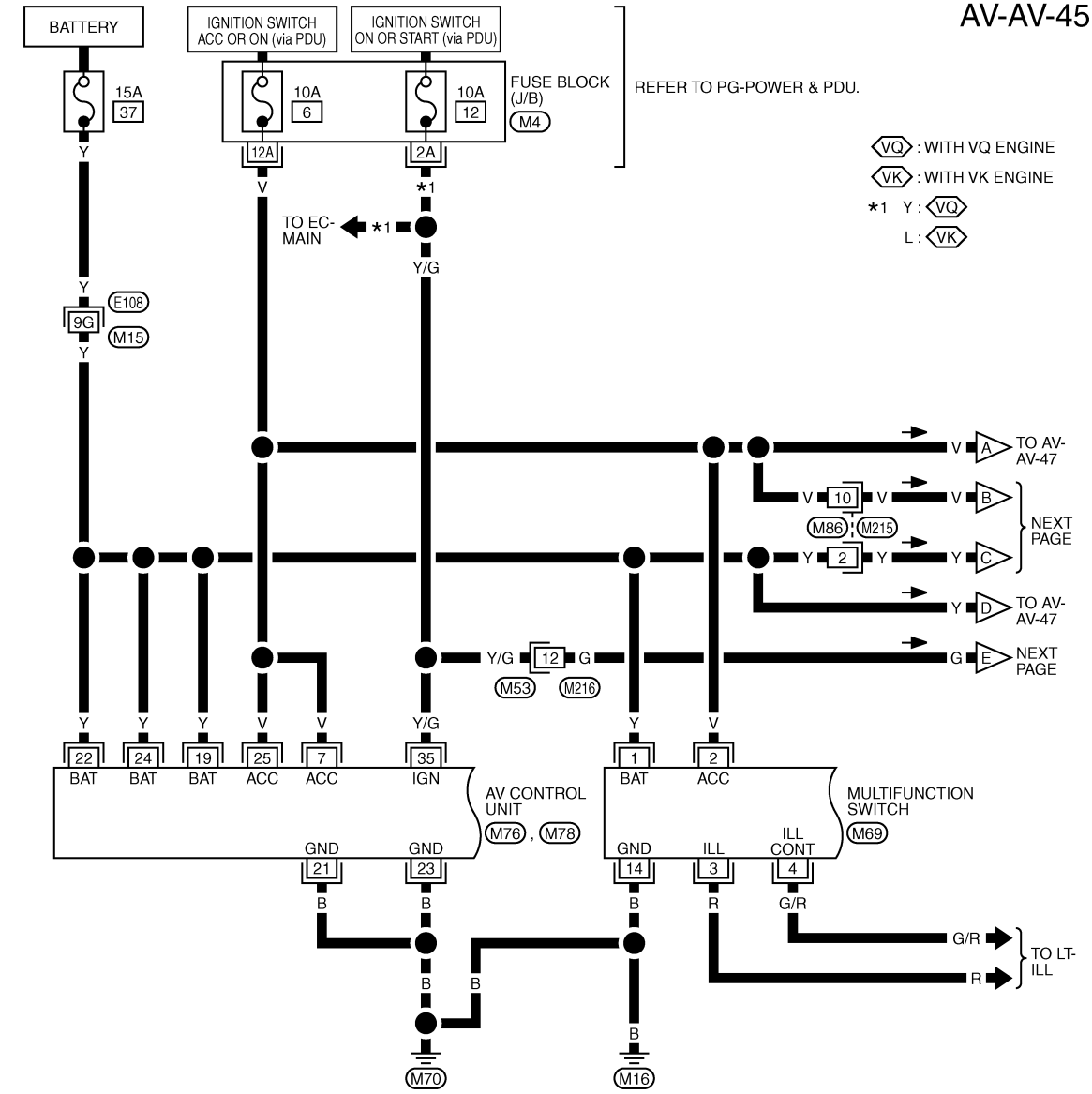
Wiring Diagram - AV - / BOSE Audio 2ch System

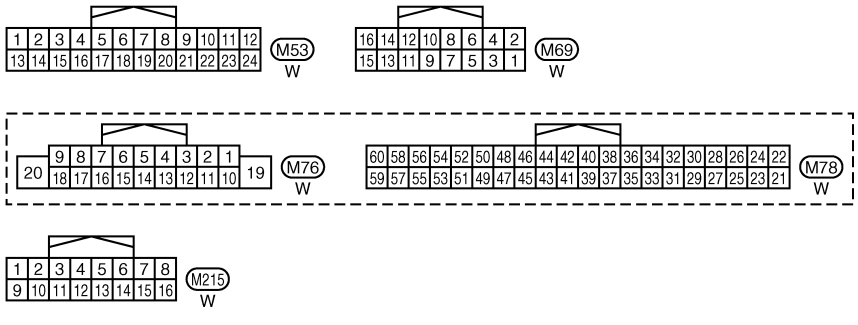
INFOID:0000000004391603

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

AV-AV-45

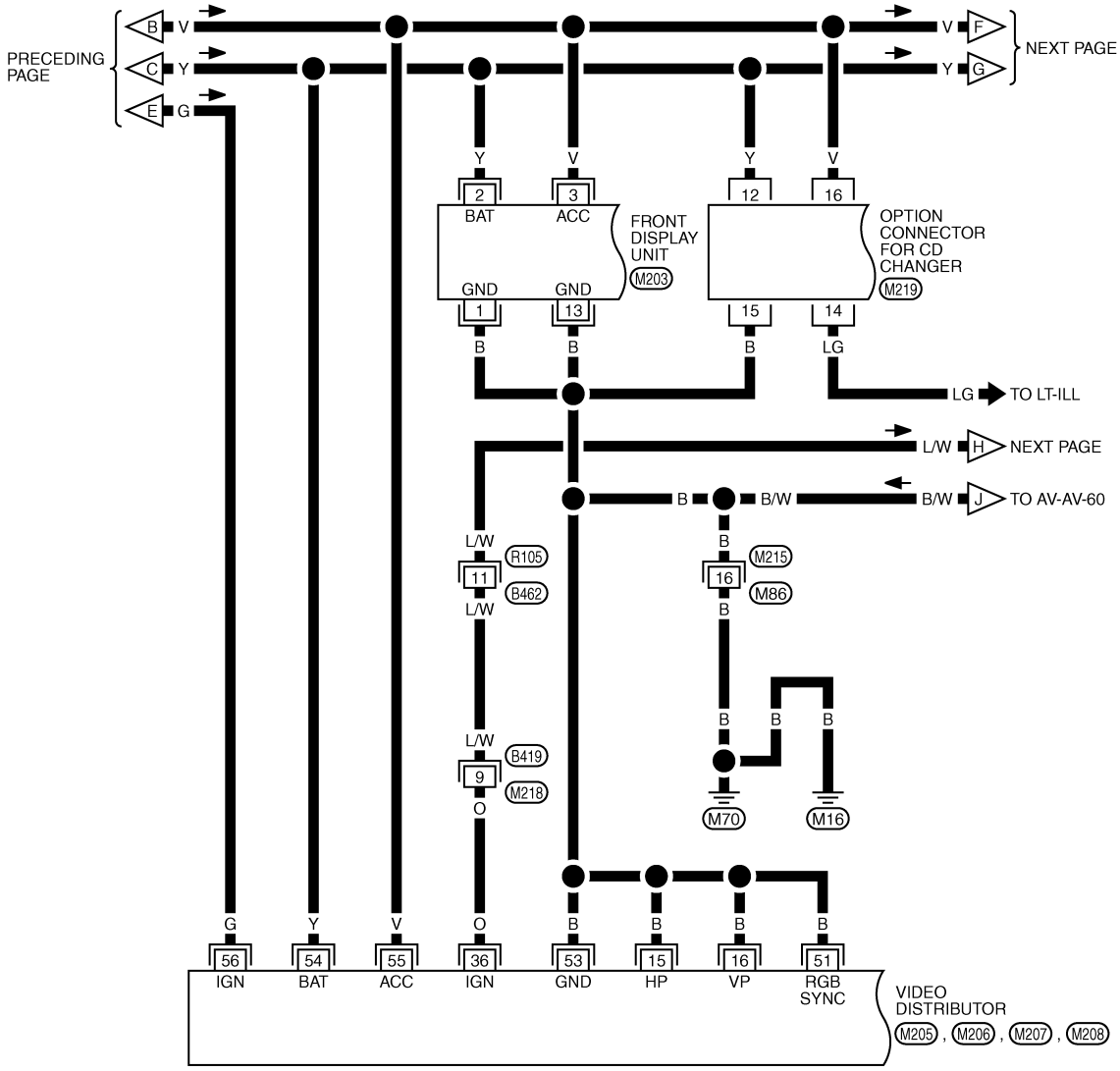


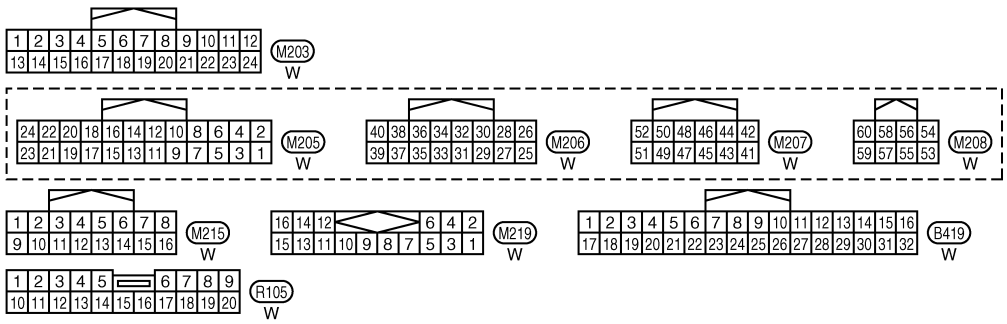


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8291E

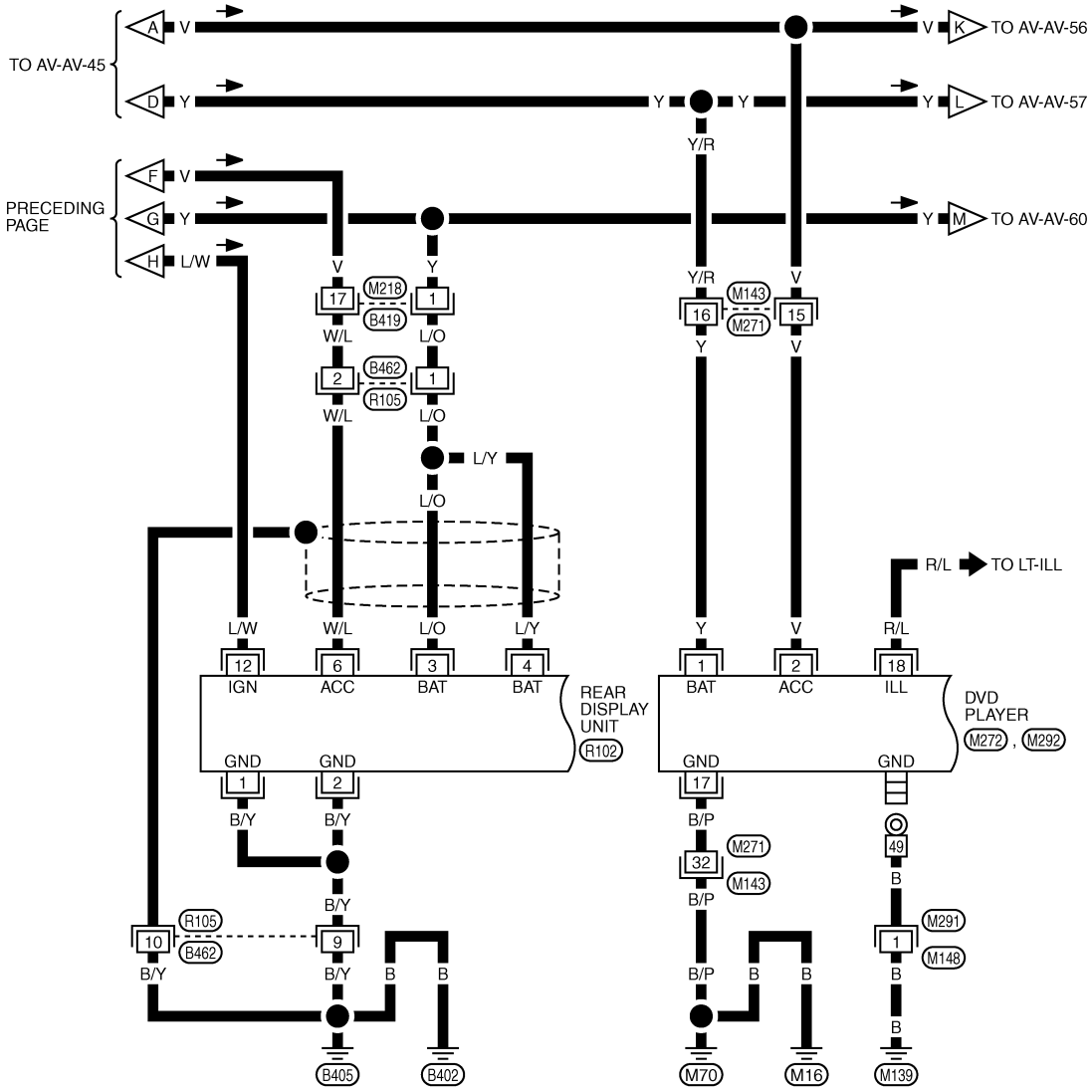
AV-AV-46

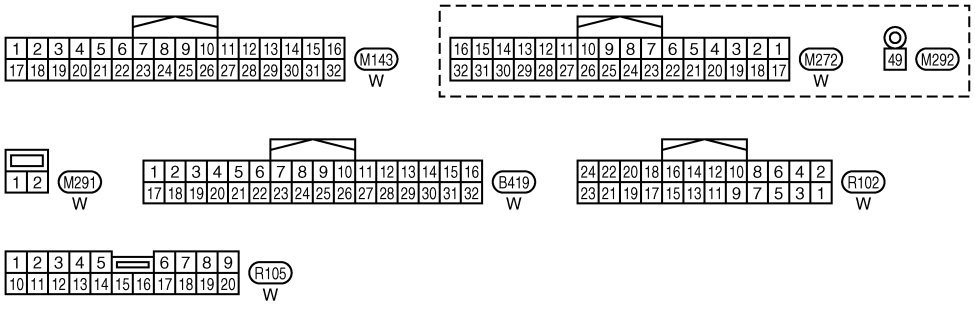




TKWT8292E

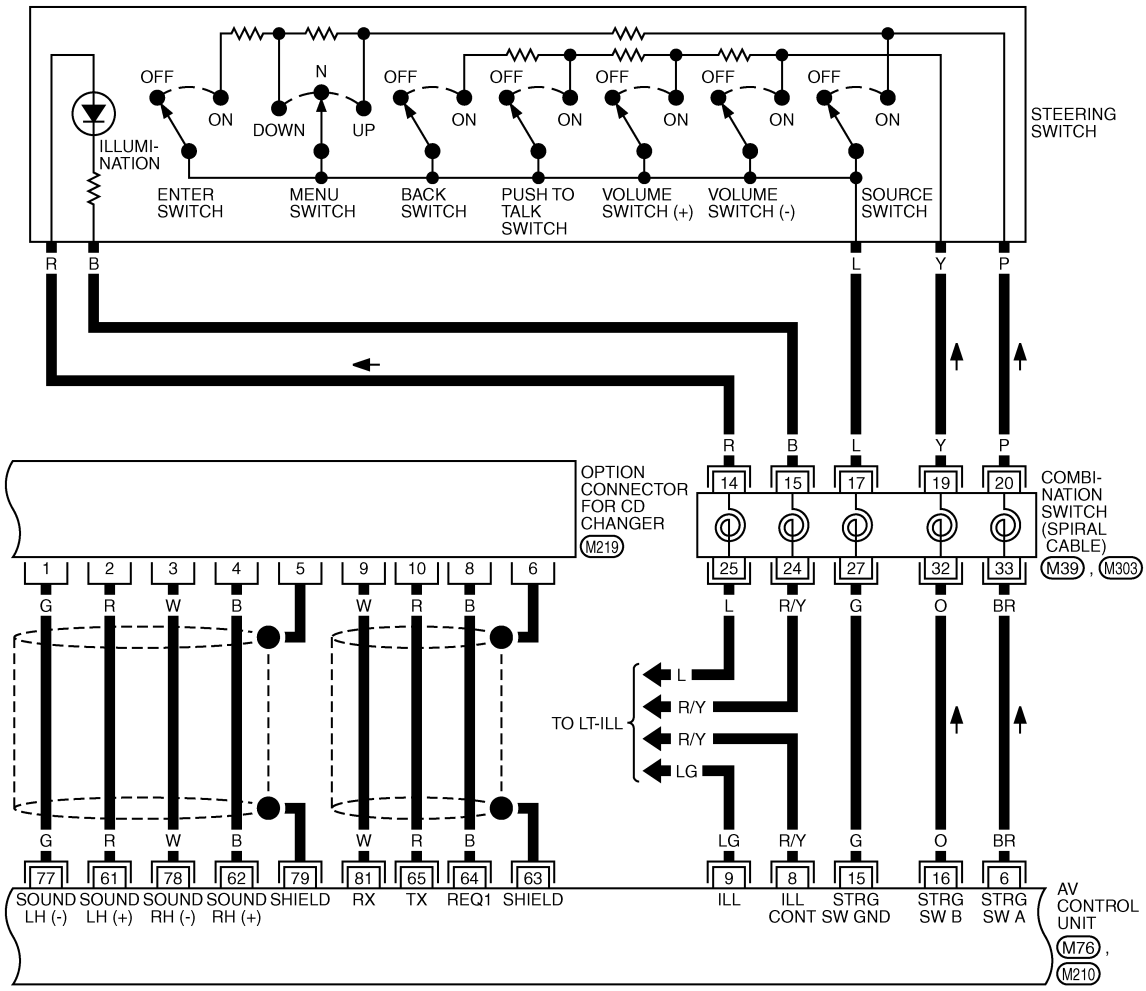
AV-AV-47

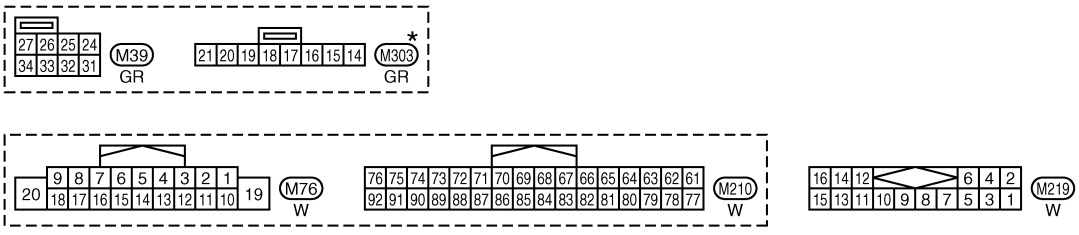




TKWT8293E

AV-AV-48

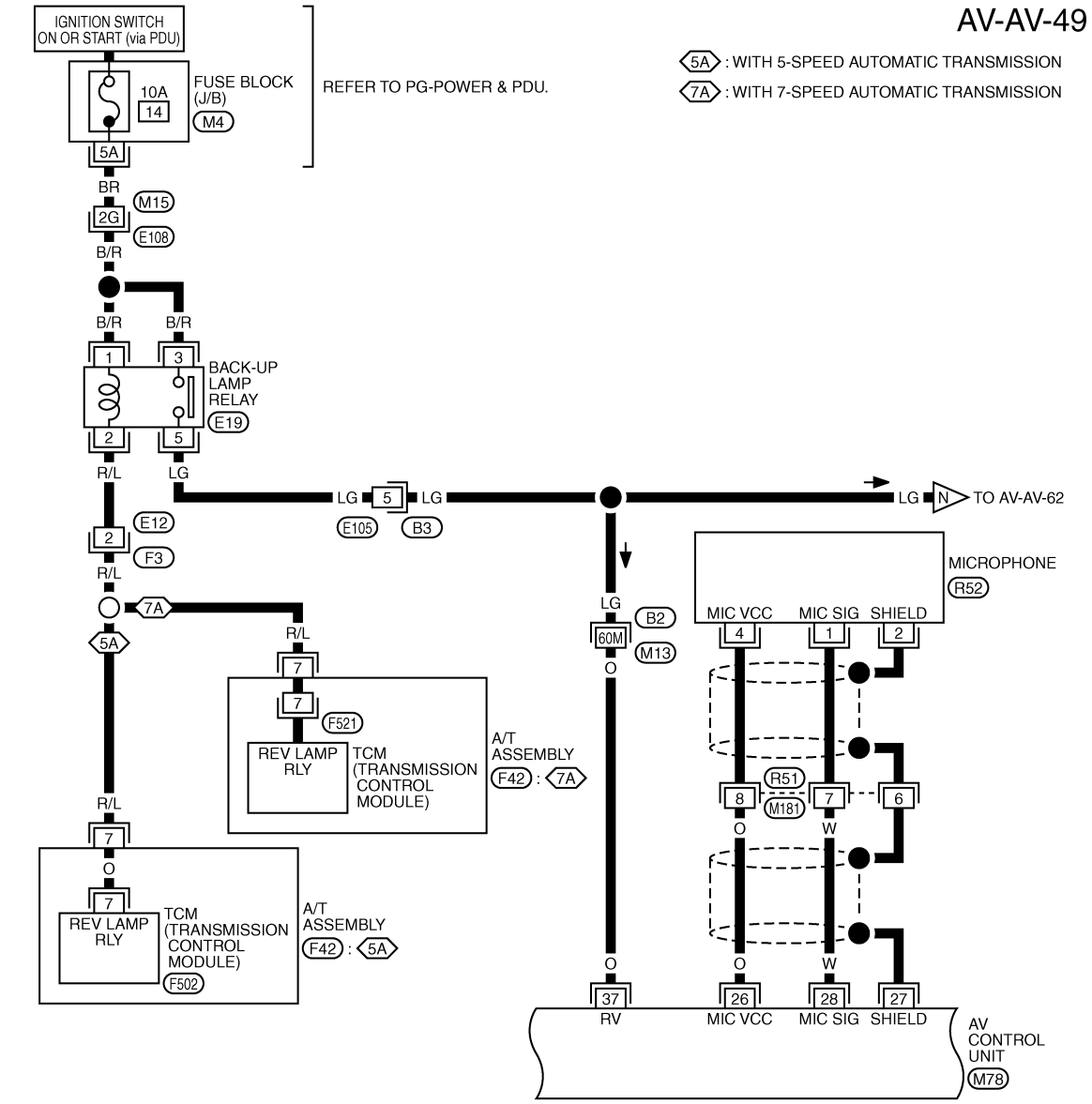


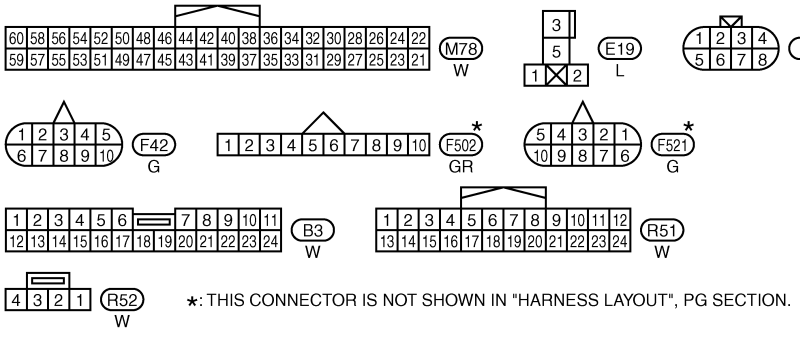


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8294E

AV-AV-49

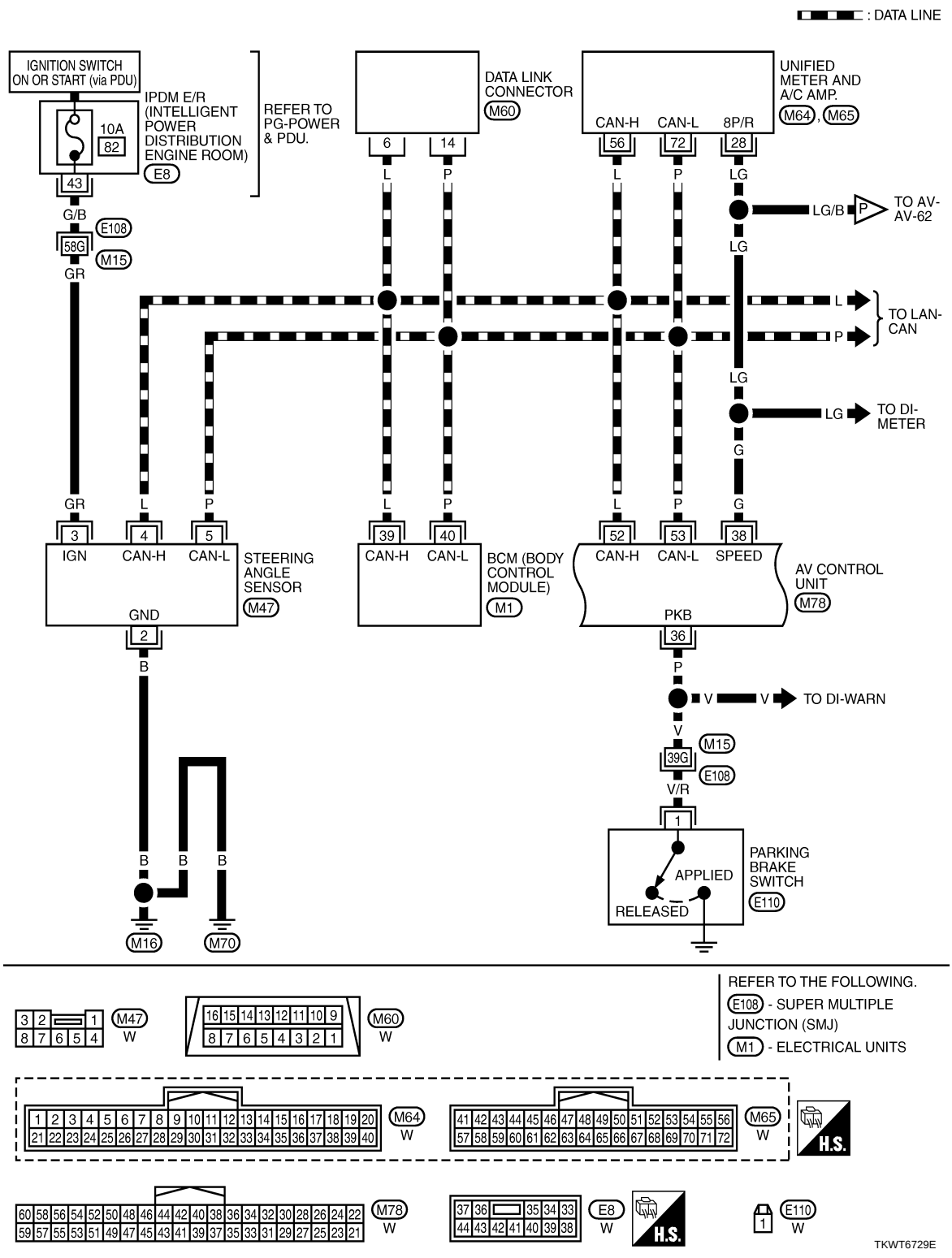




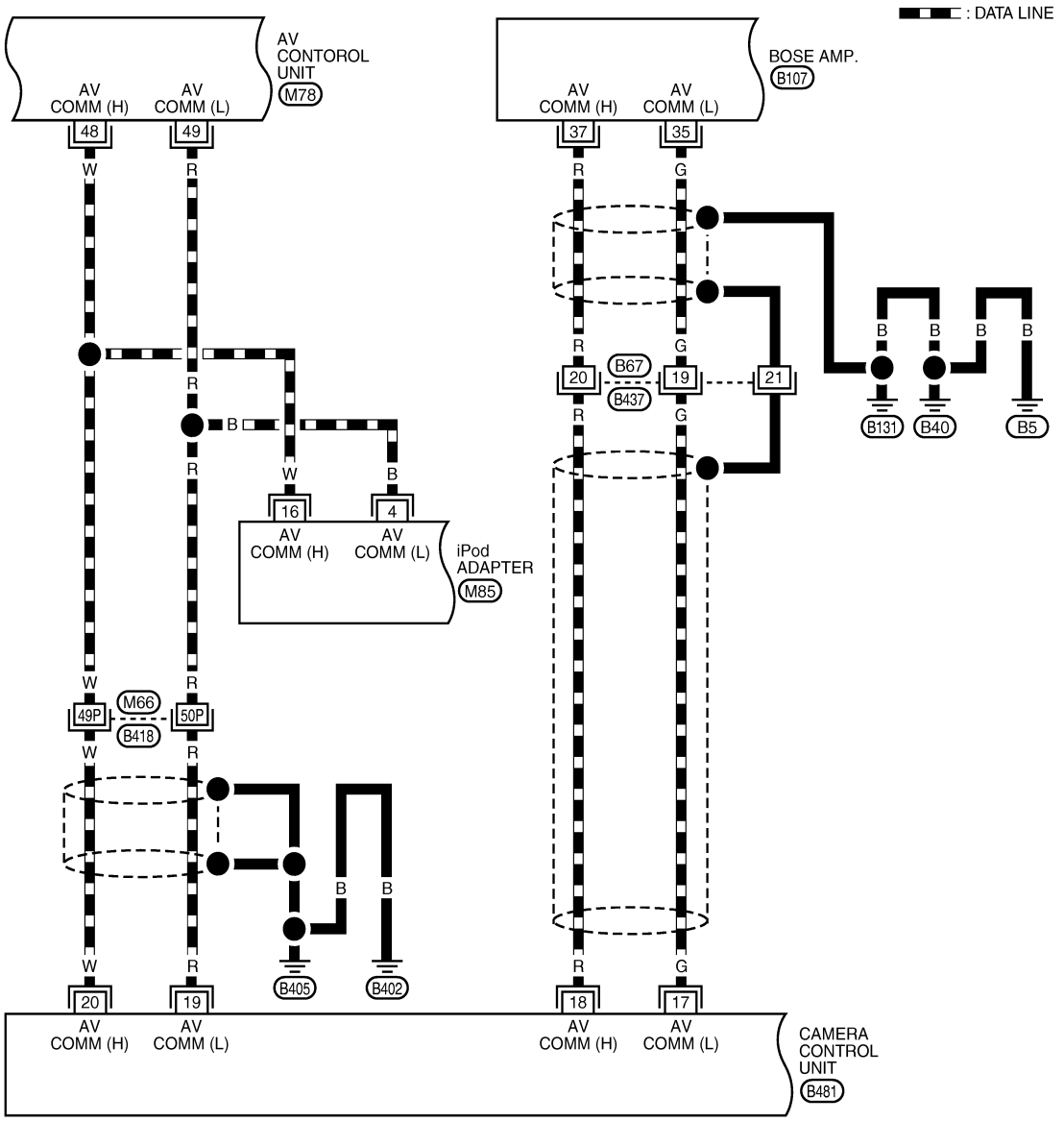
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

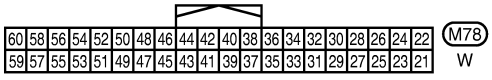
TKWT8295E

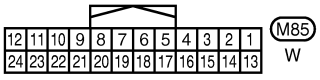
AV-AV-50

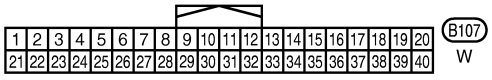

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
G/B
E108
58G
M15
GR
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6 14
L P
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56 72 28
L P LG
LG/B P TO AV-AV-62
LG
L TO LAN-CAN
P
LG
LG TO DI-METER
G
GR L P
3 4 5
IGN CAN-H CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
L P
39 40
CAN-H CAN-L
BCM (BODY CONTROL MODULE) M1
L P G
52 53 38
CAN-H CAN-L SPEED
AV CONTROL UNIT M78
PKB
36
P
V V TO DI-WARN
V
M15
39G
E108
V/R
1
PARKING BRAKE SWITCH E110
APPLIED
RELEASED
B B B
M16 M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47 W
M60 W
M64 W
M65 W
H.S.
M78 W
E8 W
E110 W
TKWT6729E

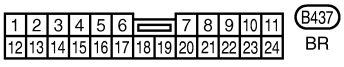
AV-AV-51

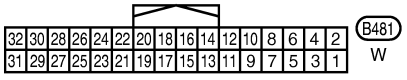








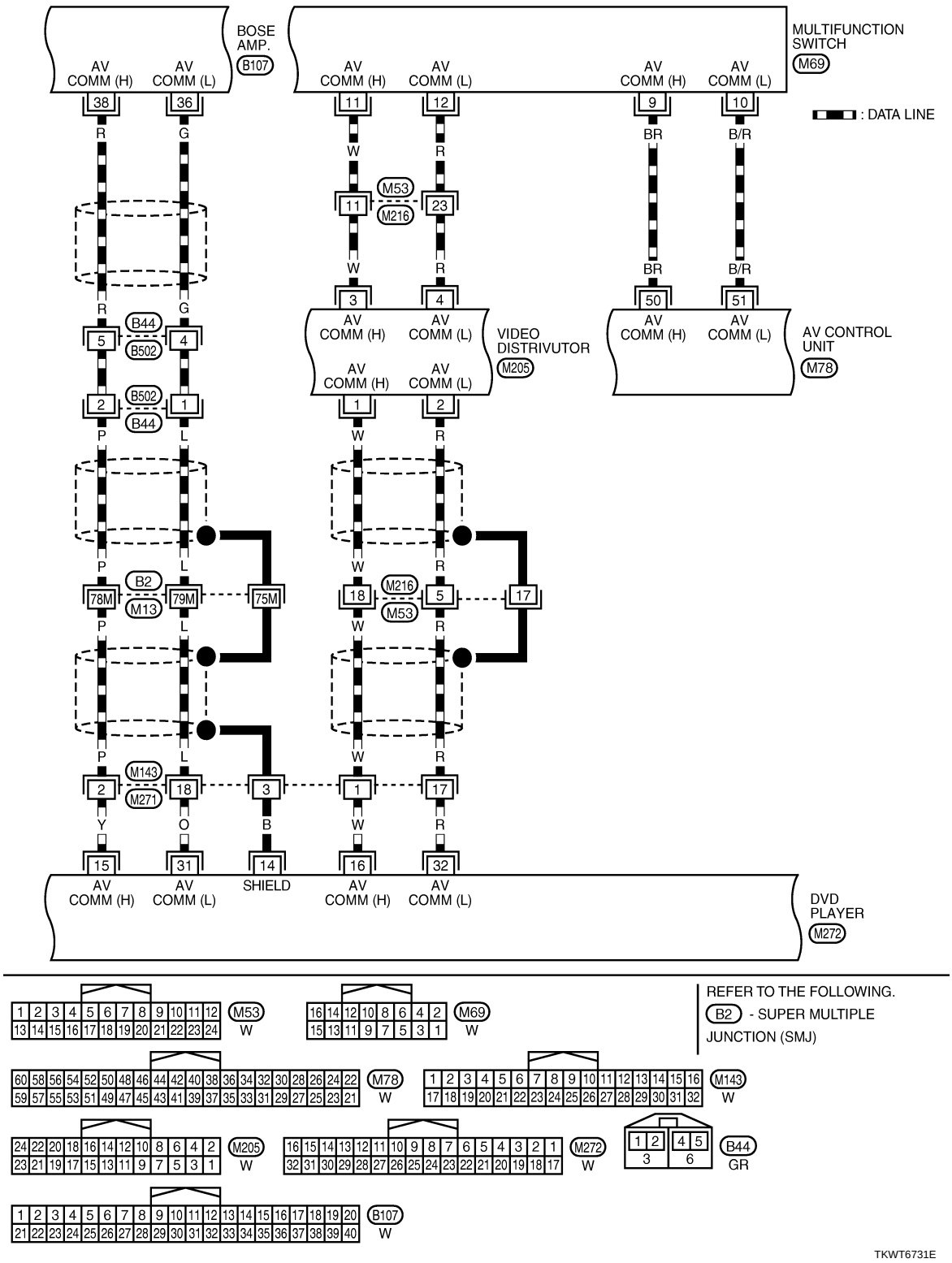




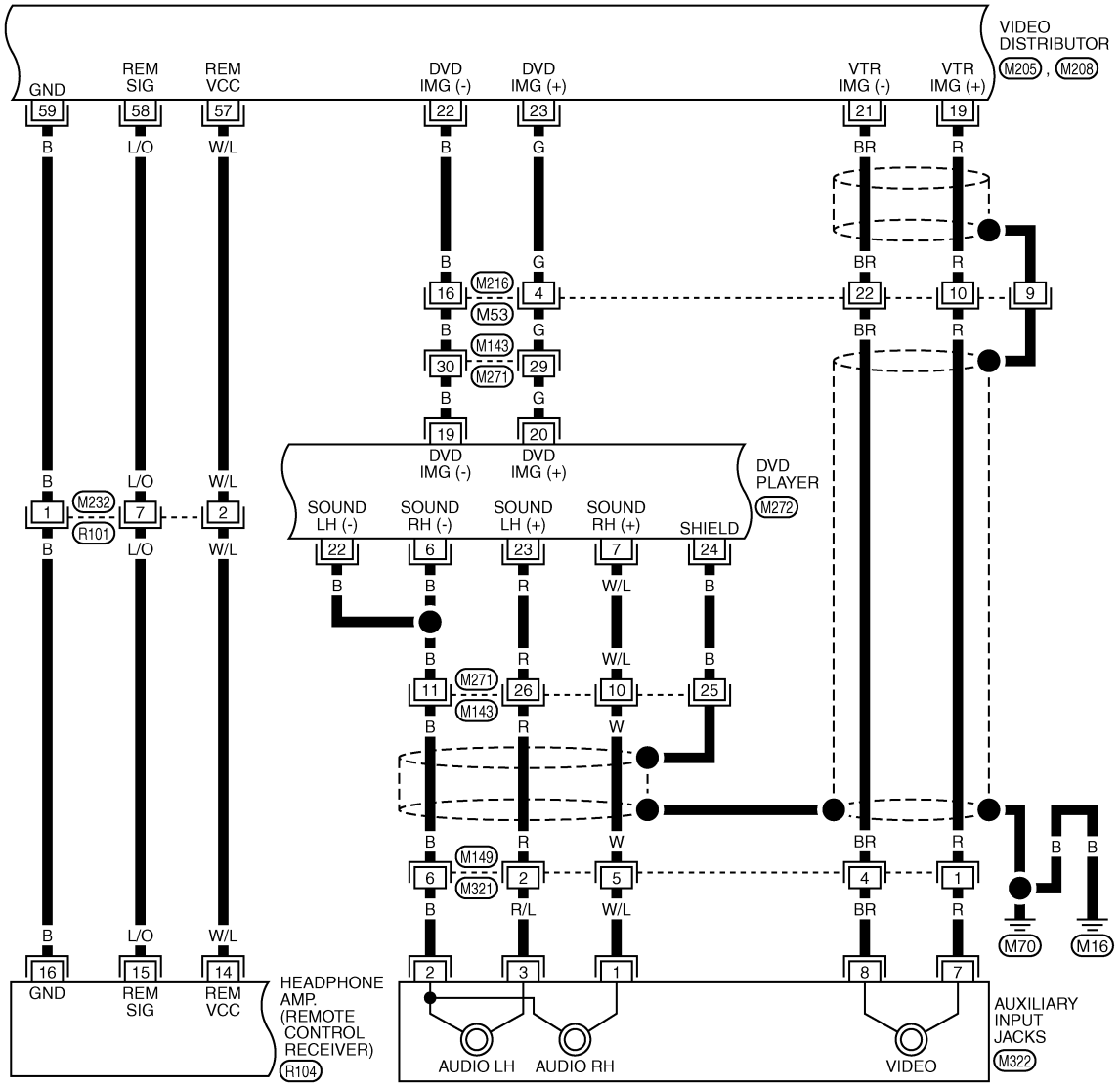
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

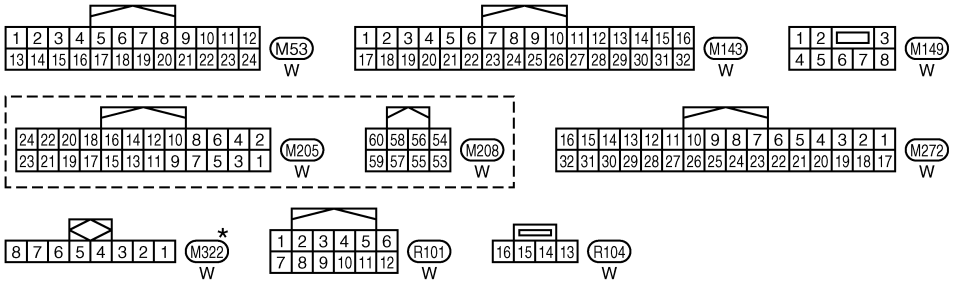
TKWT6730E

AV-AV-52


BOSE AMP. B107
MULTIFUNCTION SWITCH M69
: DATA LINE
VIDEO DISTRIVUTOR M205
AV CONTROL UNIT M78
DVD PLAYER M272
AV COMM (H)
AV COMM (L)
SHIELD
B44
B502
B2
M13
M53
M216
M143
M271
75M
78M
79M
REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)
M53 W
M69 W
M78 W
M143 W
M205 W
M272 W
B44 GR
B107 W
TKWT6731E

AV-AV-53

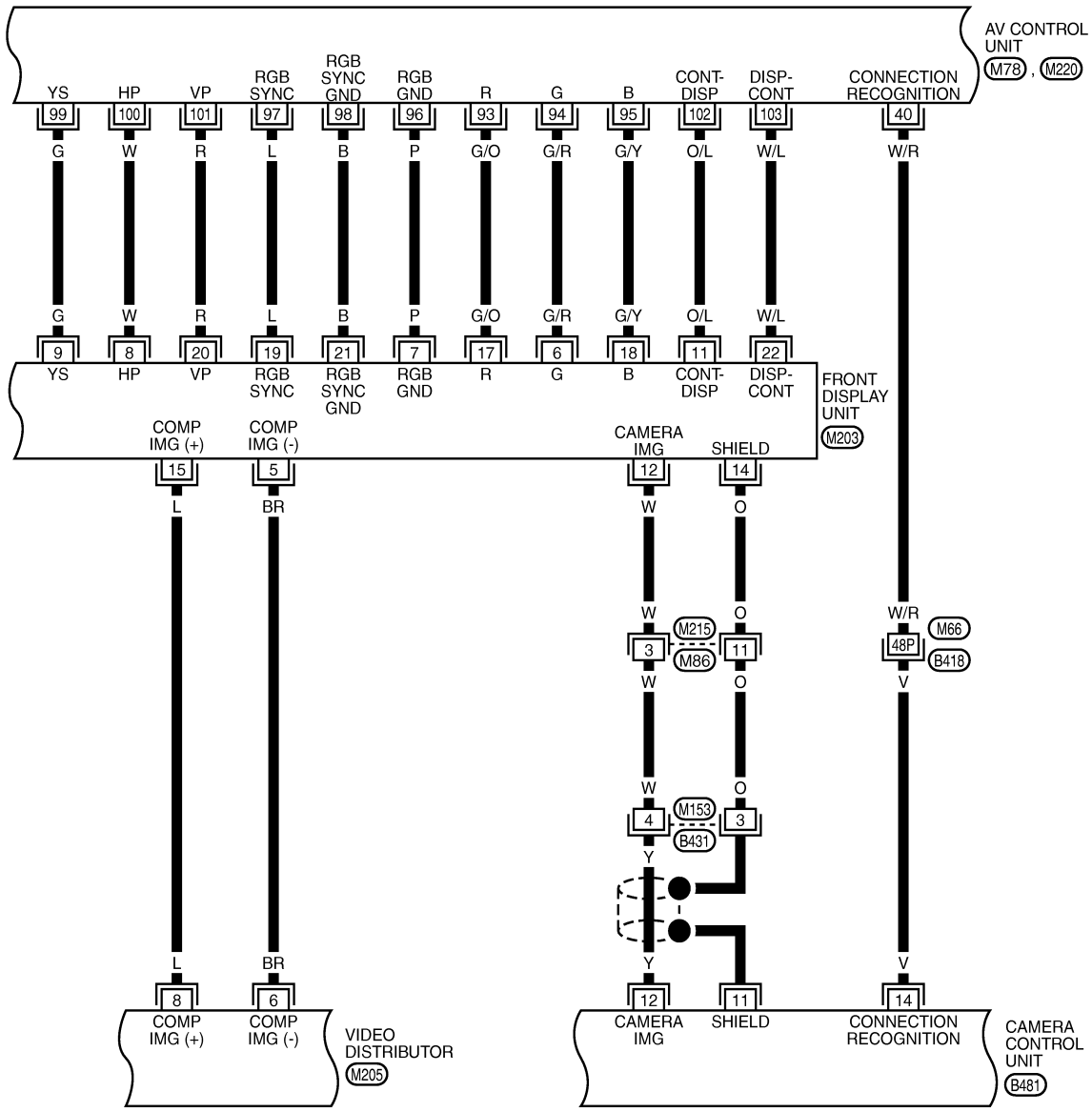


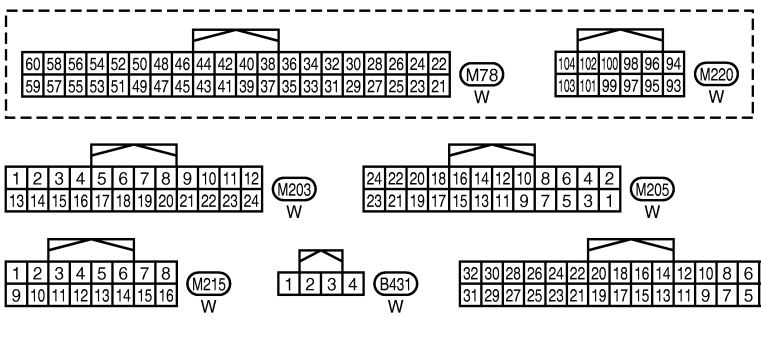


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8296E

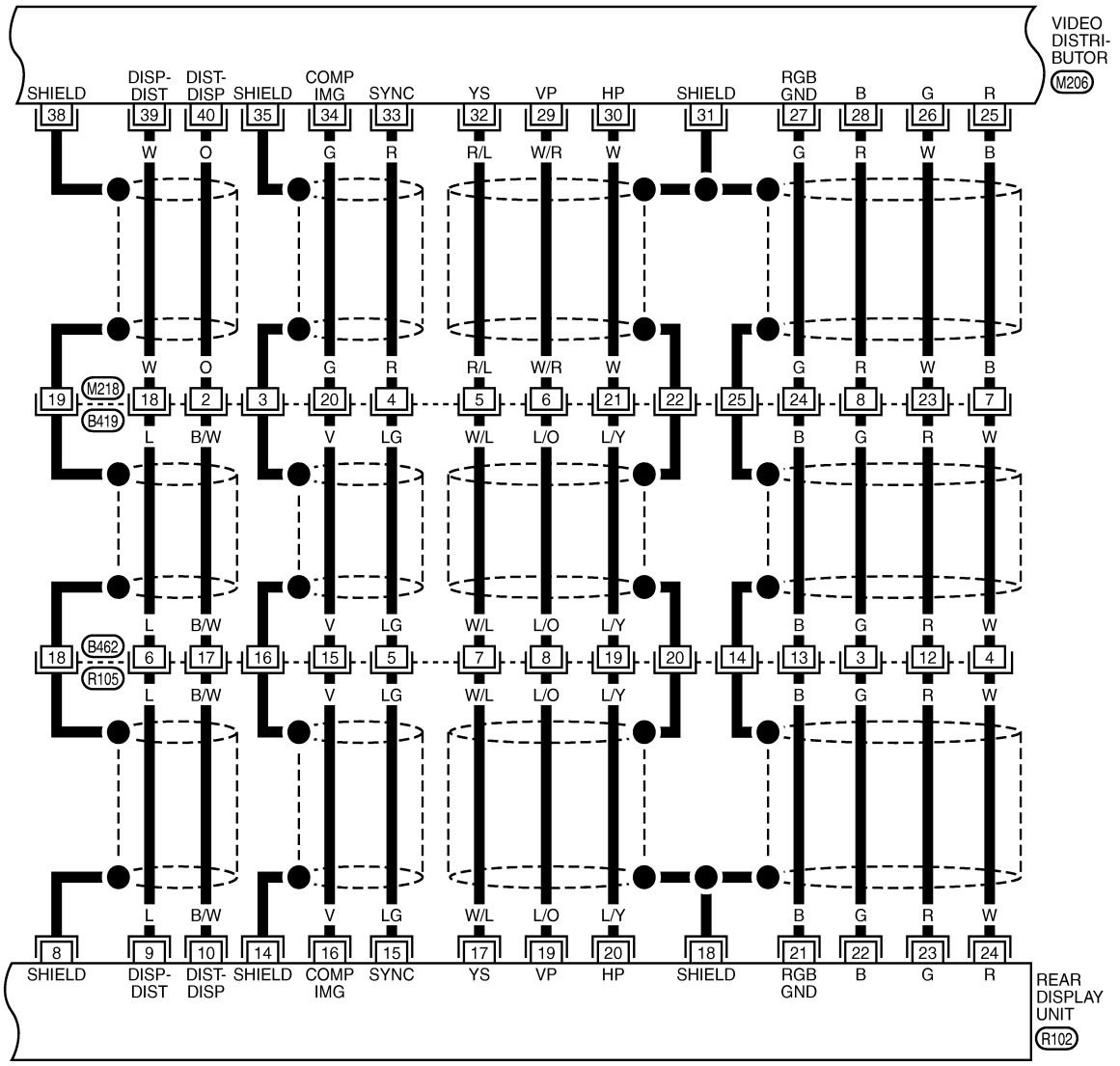
AV-AV-54

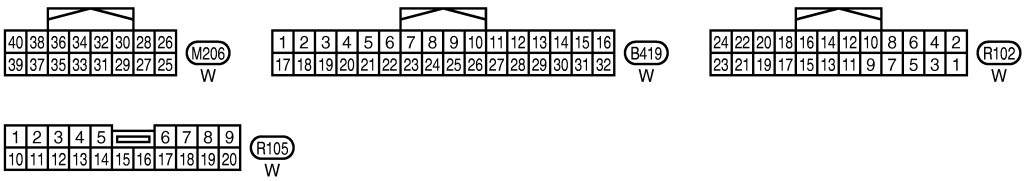




REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

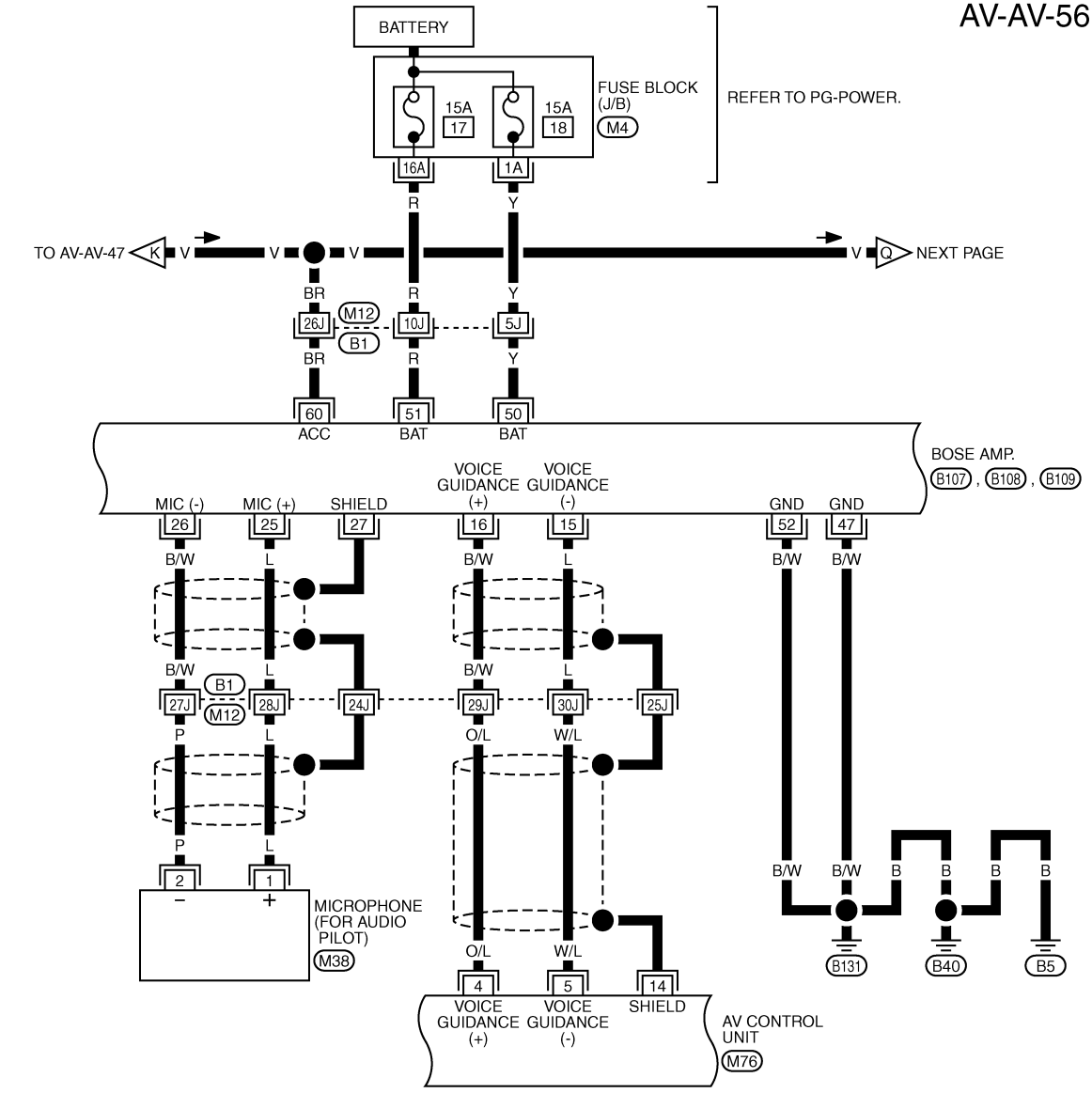
TKWT6733E

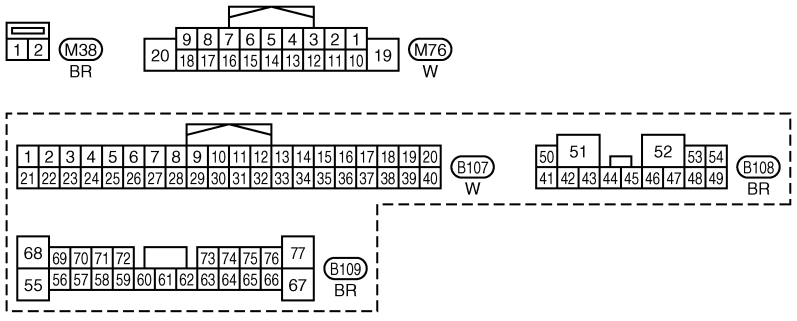

VIDEO DISTRI-BUTOR
M206
SHIELD 38
DISP-DIST 39
DIST-DISP 40
SHIELD 35
COMP IMG 34
SYNC 33
YS 32
VP 29
HP 30
SHIELD 31
RGB GND 27
B 28
G 26
R 25
W O G R R/L W/R W G R W B
M218
B419
19 18 2 3 20 4 5 6 21 22 25 24 8 23 7
L B/W V LG W/L L/O L/Y B G R W
B462
R105
18 6 17 16 15 5 7 8 19 20 14 13 3 12 4
L B/W V LG W/L L/O L/Y B G R W
8 9 10 14 16 15 17 19 20 18 21 22 23 24
SHIELD
DISP-DIST
DIST-DISP
SHIELD
COMP IMG
SYNC
YS
VP
HP
SHIELD
RGB GND
B
G
R
REAR DISPLAY UNIT
R102


M206
W
B419
W
R102
W
R105
W

TKWT6734E

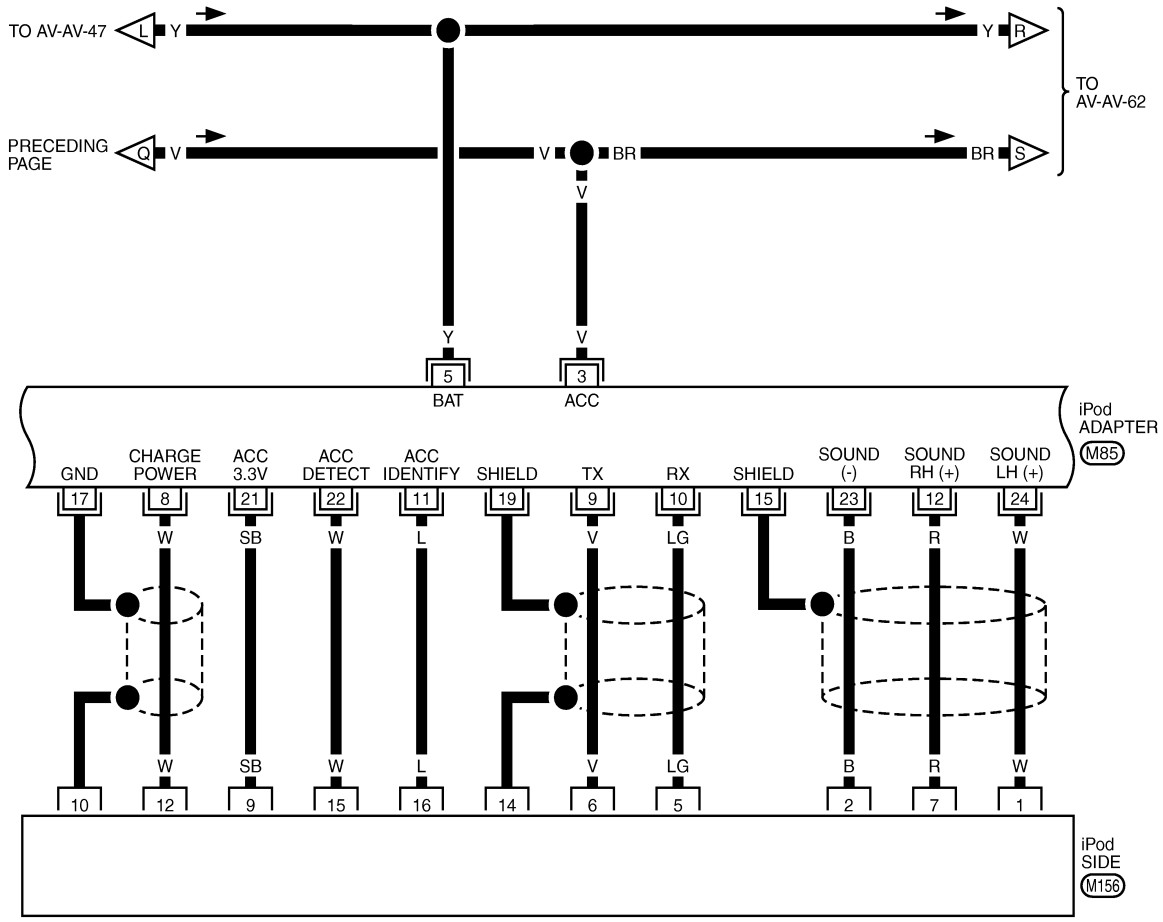
AV-AV-56

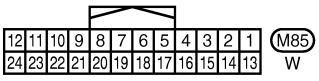


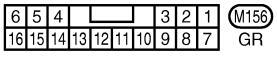


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8297E

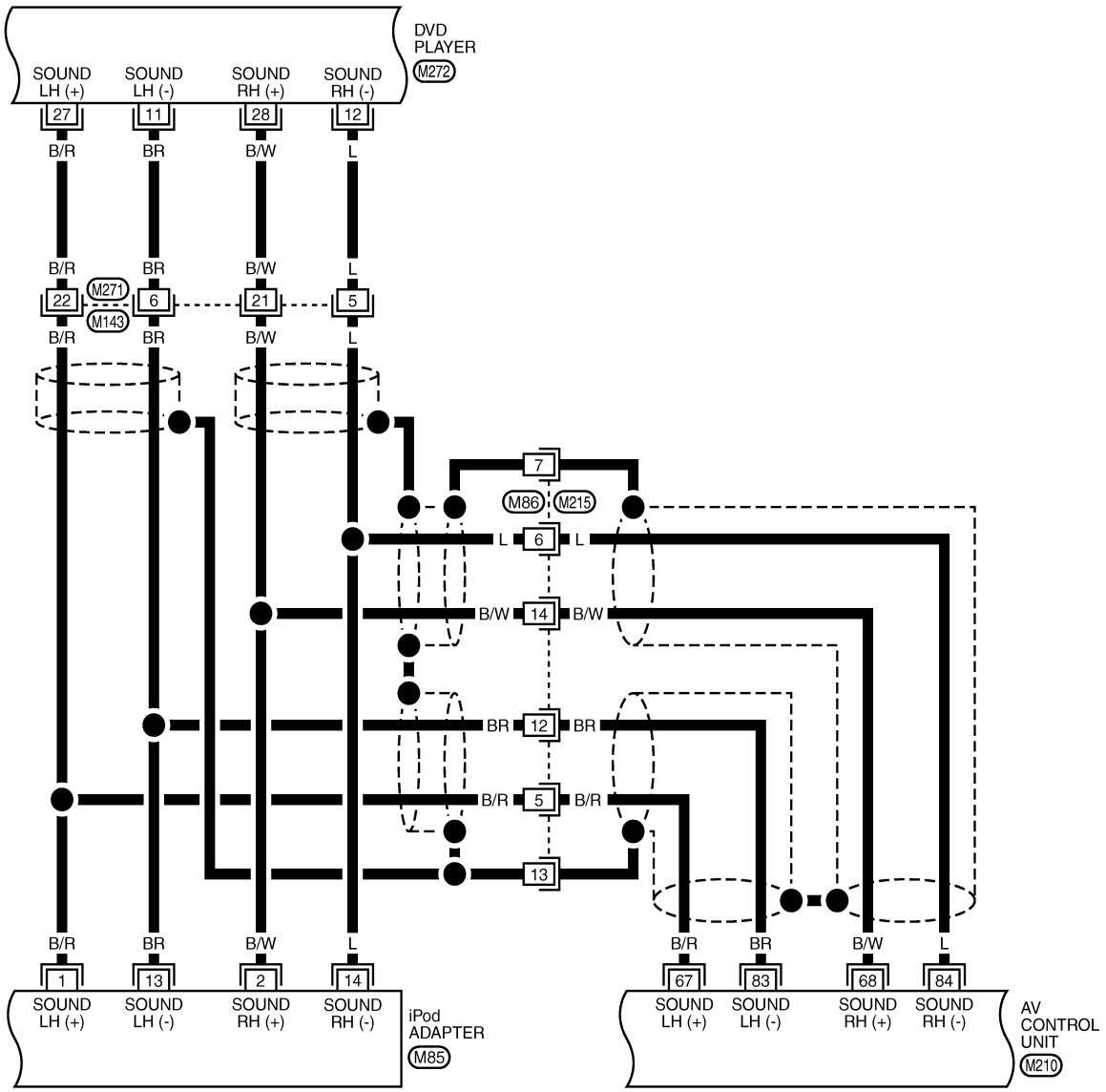

TO AV-AV-47
L
Y
Y
R
TO
AV-AV-62
PRECEDING
PAGE
Q
V
V
BR
BR
S
V
Y
V
5
BAT
3
ACC
iPod
ADAPTER
M85
GND
CHARGE
POWER
ACC
3.3V
ACC
DETECT
ACC
IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND
(-)
SOUND
RH (+)
SOUND
LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod
SIDE
M156

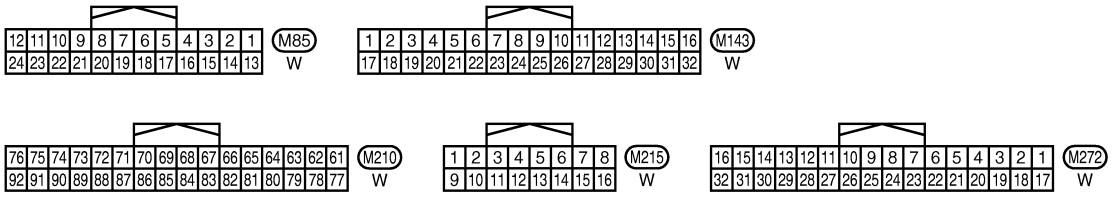

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6737E

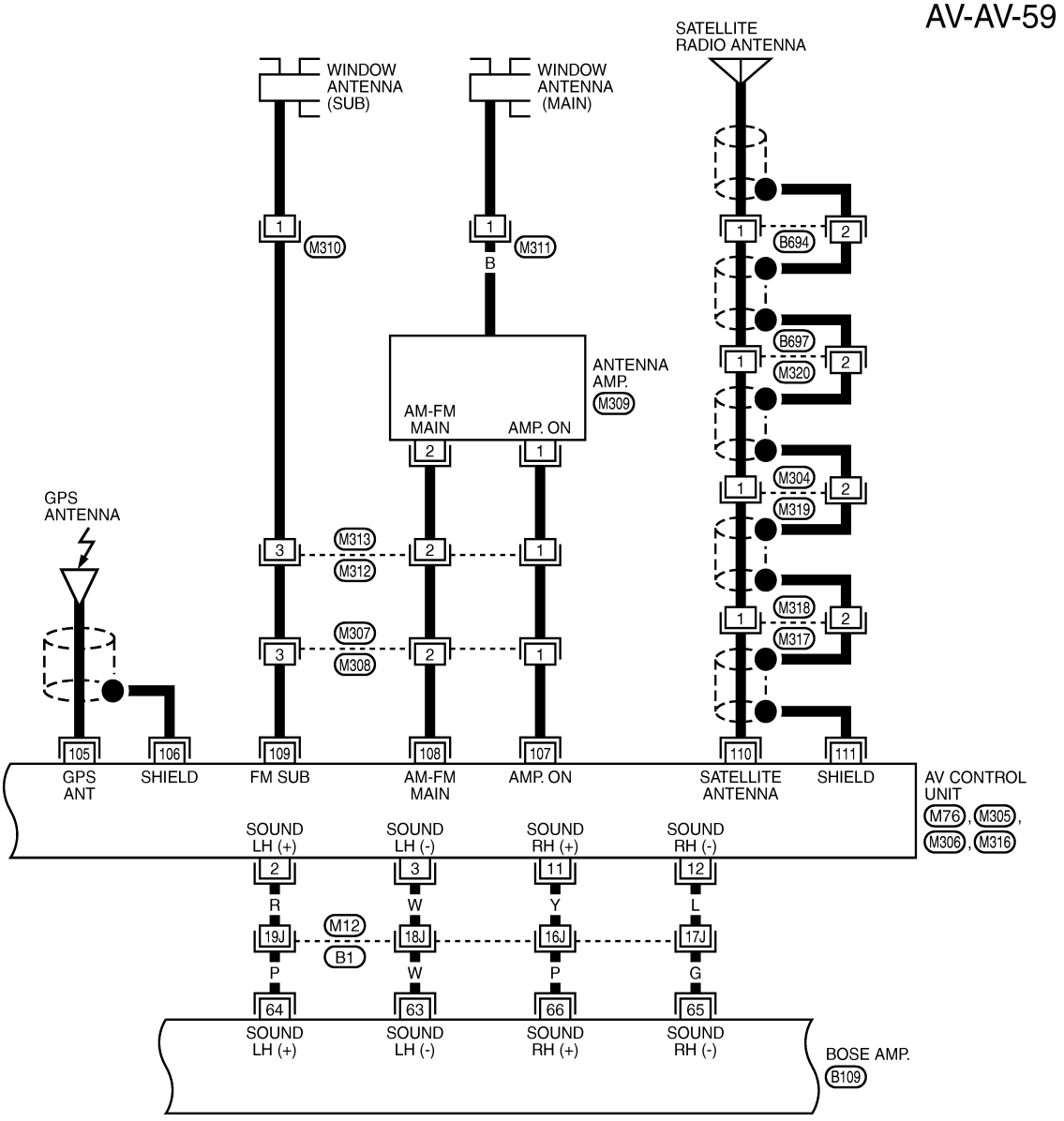
AV-AV-58

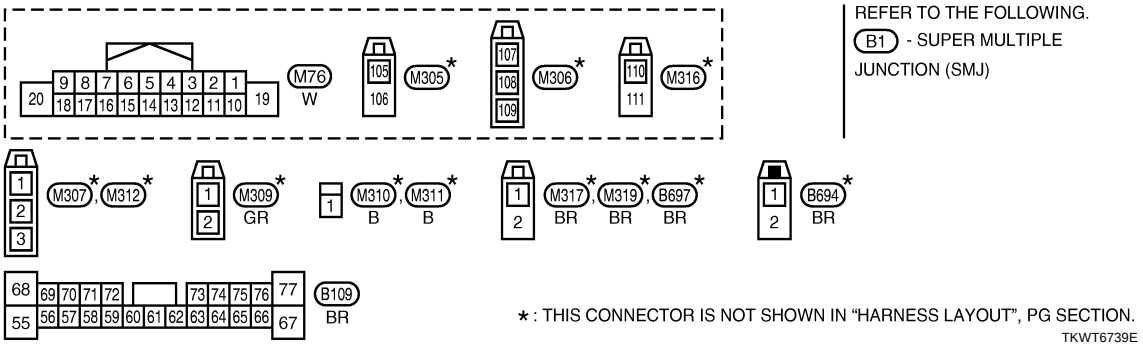




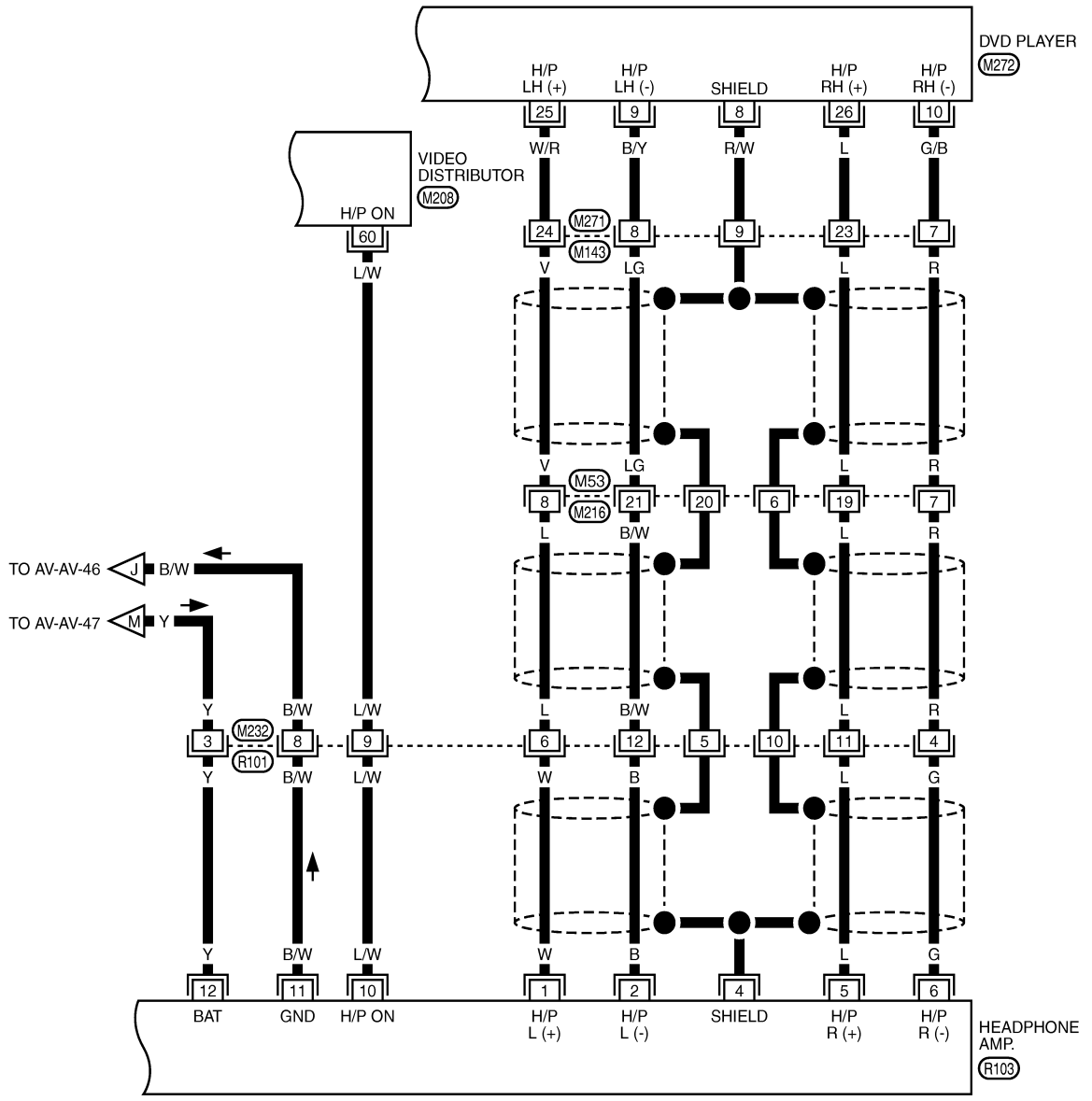
TKWT6738E

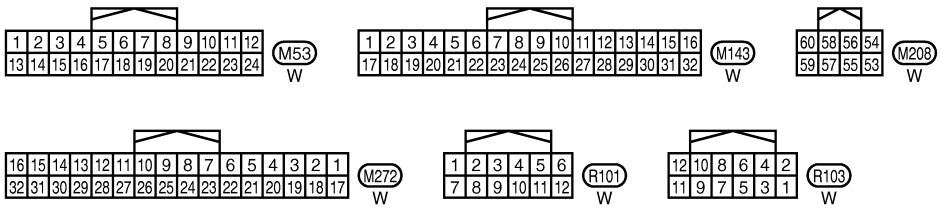
AV-AV-59


SATELLITE RADIO ANTENNA
WINDOW ANTENNA (SUB)
WINDOW ANTENNA (MAIN)
M310
M311
B
B694
B697
M320
M304
M319
M318
M317
ANTENNA AMP.
M309
AM-FM MAIN
AMP. ON
GPS ANTENNA
M313
M312
M307
M308
105
106
109
108
107
110
111
GPS ANT
SHIELD
FM SUB
AM-FM MAIN
AMP. ON
SATELLITE ANTENNA
SHIELD
AV CONTROL UNIT
M76, M305, M306, M316
SOUND LH (+)
SOUND LH (-)
SOUND RH (+)
SOUND RH (-)
R
W
Y
L
M12
B1
P
W
P
G
64
63
66
65
BOSE AMP.
B109


M76
W
M305
M306
M316
M307, M312
M309
GR
M310, M311
B
B
M317, M319, M697
BR
BR
BR
M694
B109
BR
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)
★ : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.
TKWT6739E

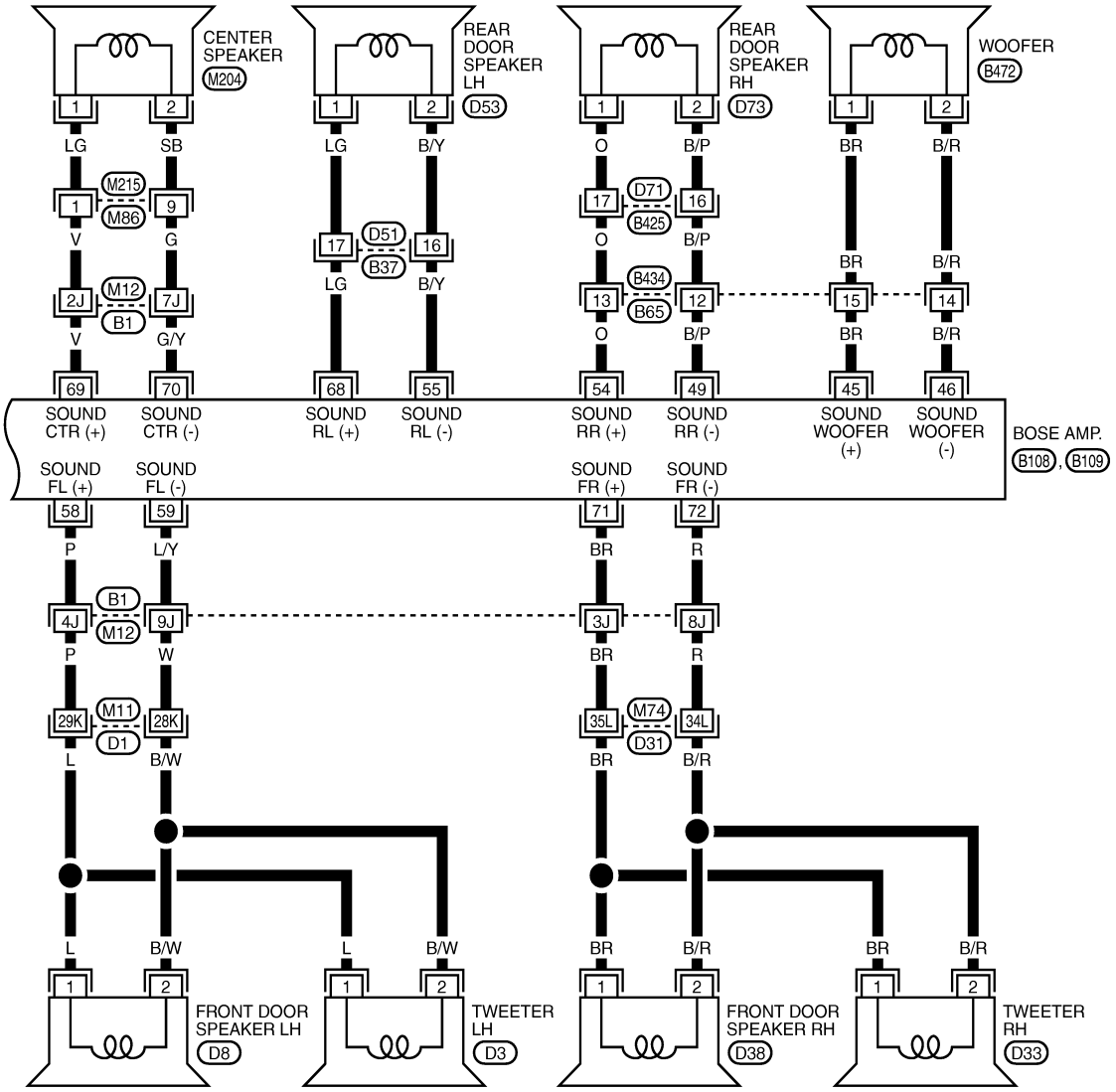
AV-AV-60



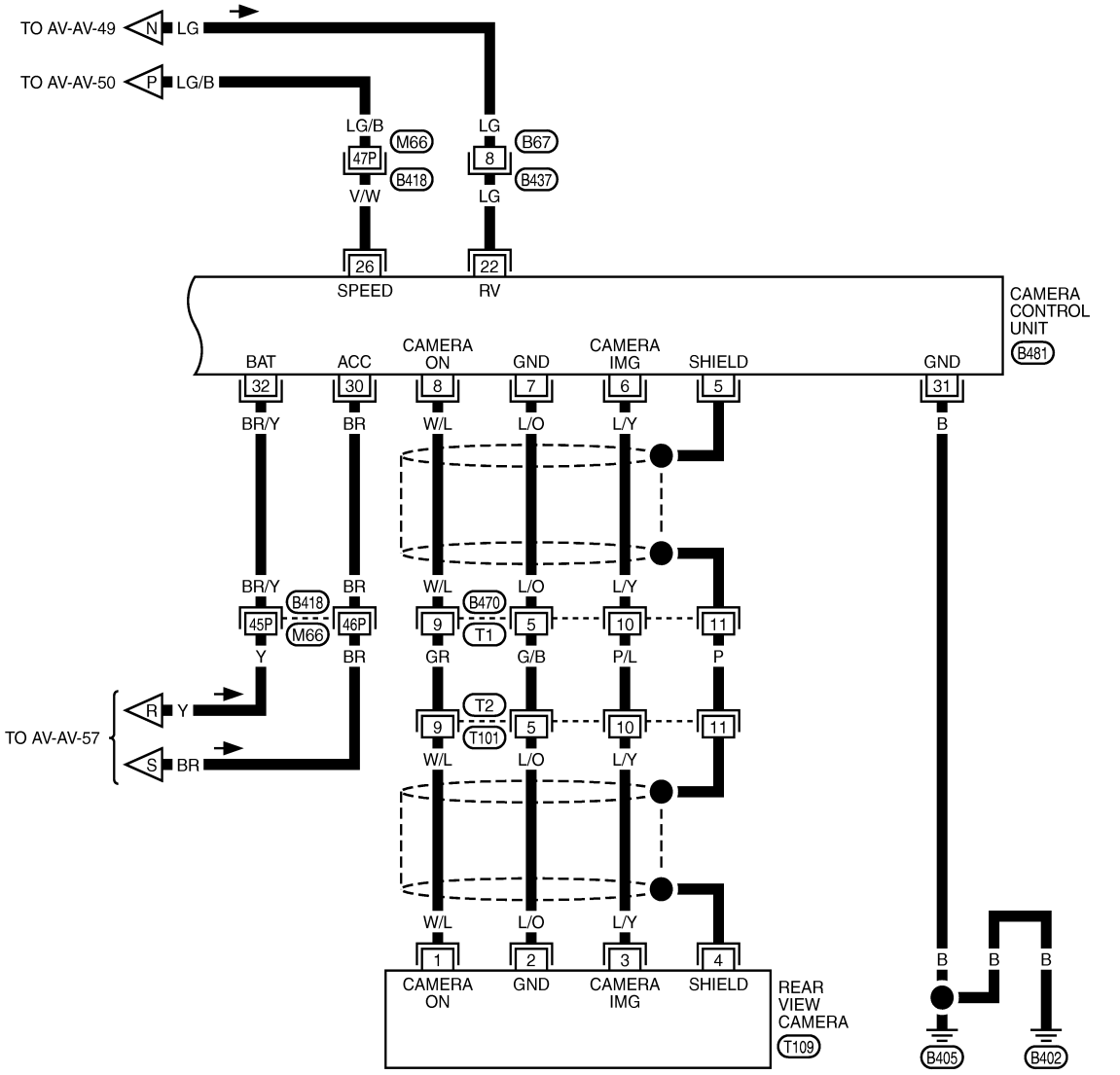


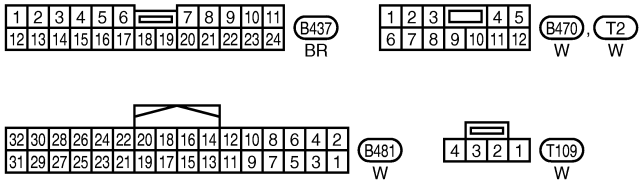
TKWT6740E

AV-AV-61


CENTER SPEAKER M204
REAR DOOR SPEAKER LH D53
REAR DOOR SPEAKER RH D73
WOOFER B472
LG SB LG B/Y O B/P BR B/R
M215 M86 D51 B37 D71 B425 B434 B65 M12 B1
V G LG B/Y O B/P BR B/R
V G/Y O B/P BR B/R
69 70 68 55 54 49 45 46
SOUND CTR (+) SOUND CTR (-) SOUND RL (+) SOUND RL (-) SOUND RR (+) SOUND RR (-) SOUND WOOFER (+) SOUND WOOFER (-)
BOSE AMP. B108, B109
SOUND FL (+) SOUND FL (-) SOUND FR (+) SOUND FR (-)
58 59 71 72
P L/Y BR R
B1 M12 4J 9J 3J 8J
P W BR R
M11 D1 29K 28K M74 D31 35L 34L
L B/W BR B/R
L B/W L B/W BR B/R BR B/R
FRONT DOOR SPEAKER LH D8
TWEETER LH D3
FRONT DOOR SPEAKER RH D38
TWEETER RH D33
REFER TO THE FOLLOWING.
B1, D1, D31 - SUPER MULTIPLE JUNCTION (SMJ)
M204, D3, D33 BR BR BR
M215 W
B37, B425 W W
B108 BR
B109 BR
B434 W
B472 W
D8, D38, D53, D73 BR BR BR BR
TKWT6741E

AV-AV-62



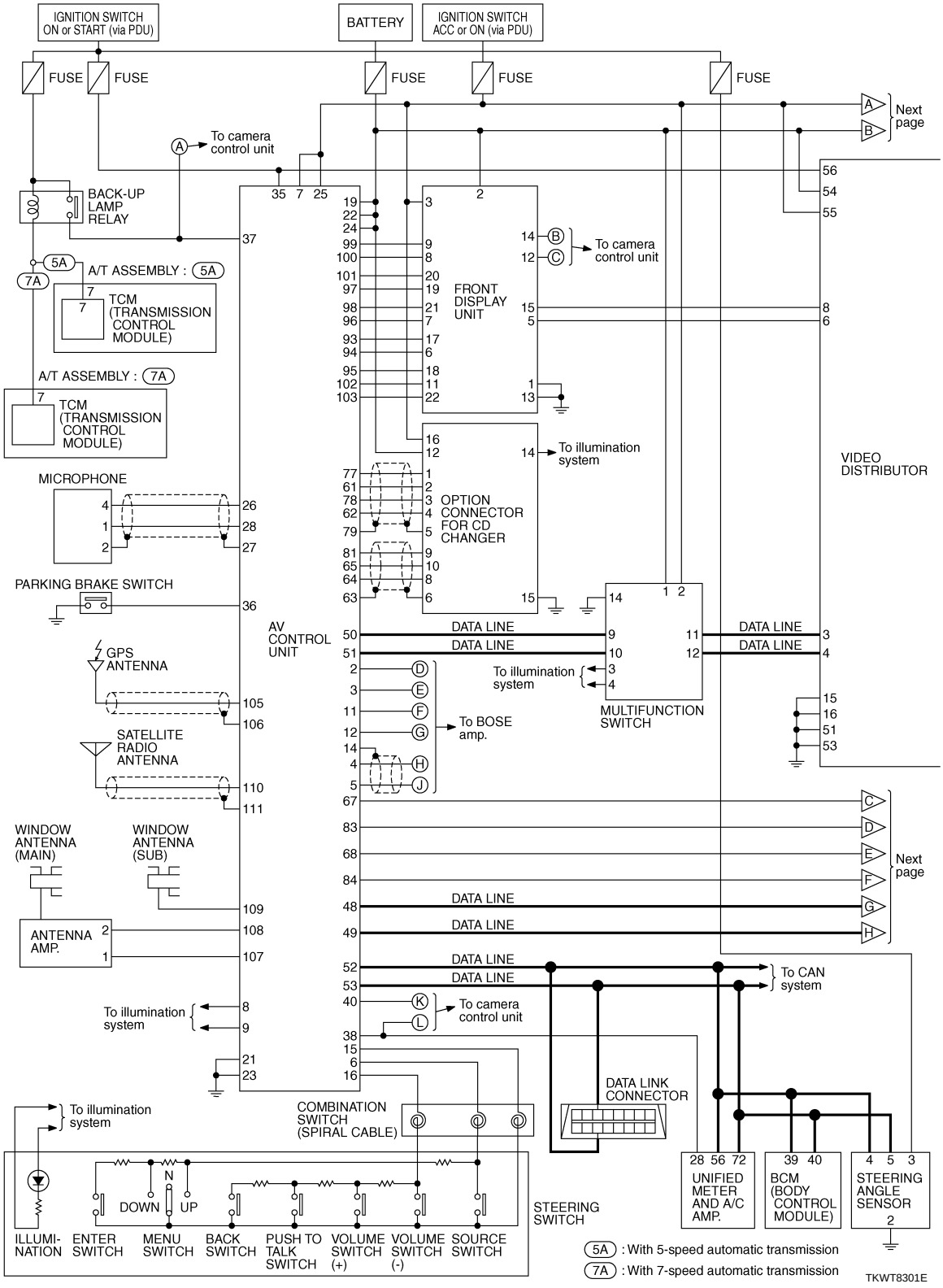


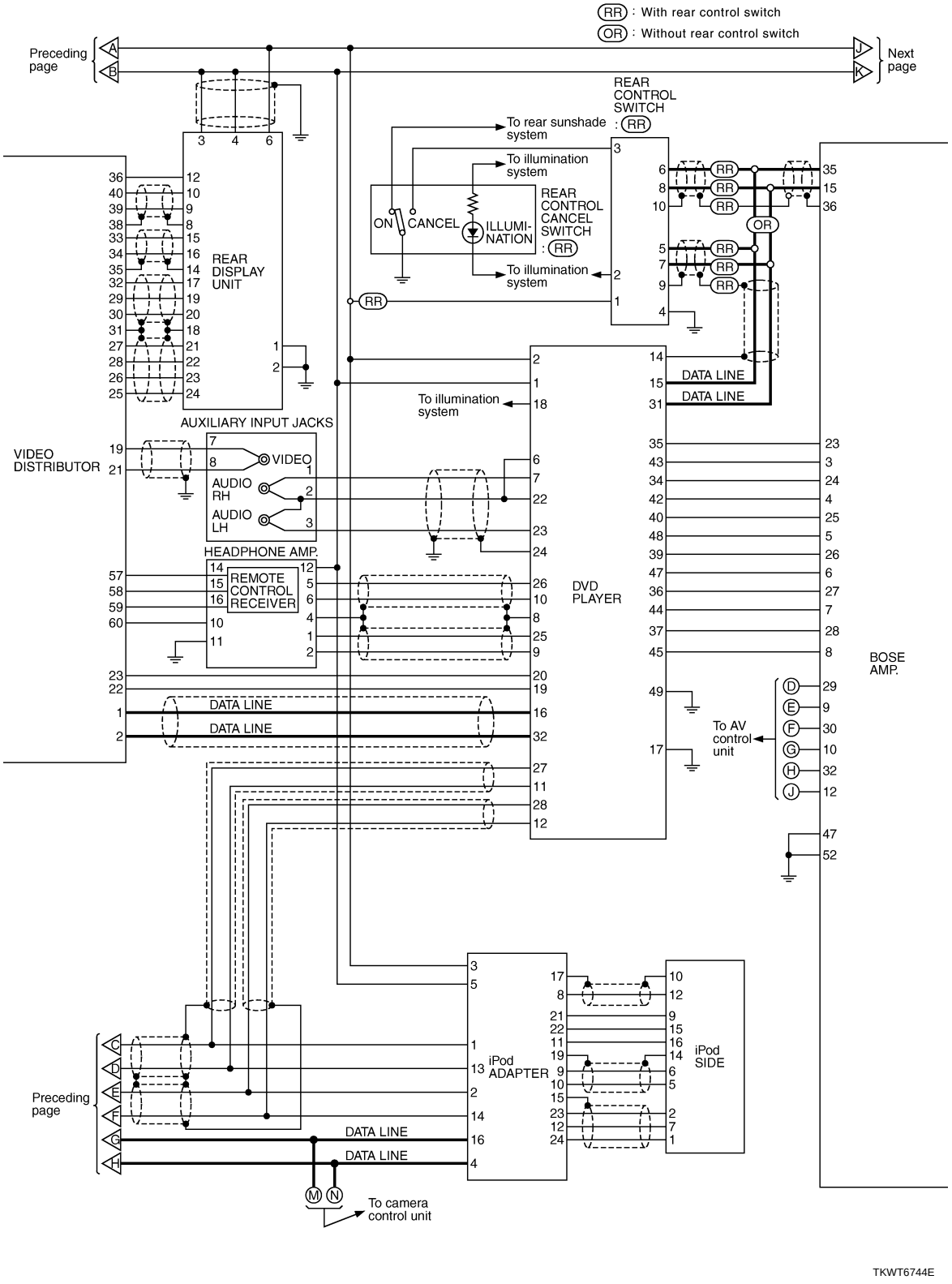
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

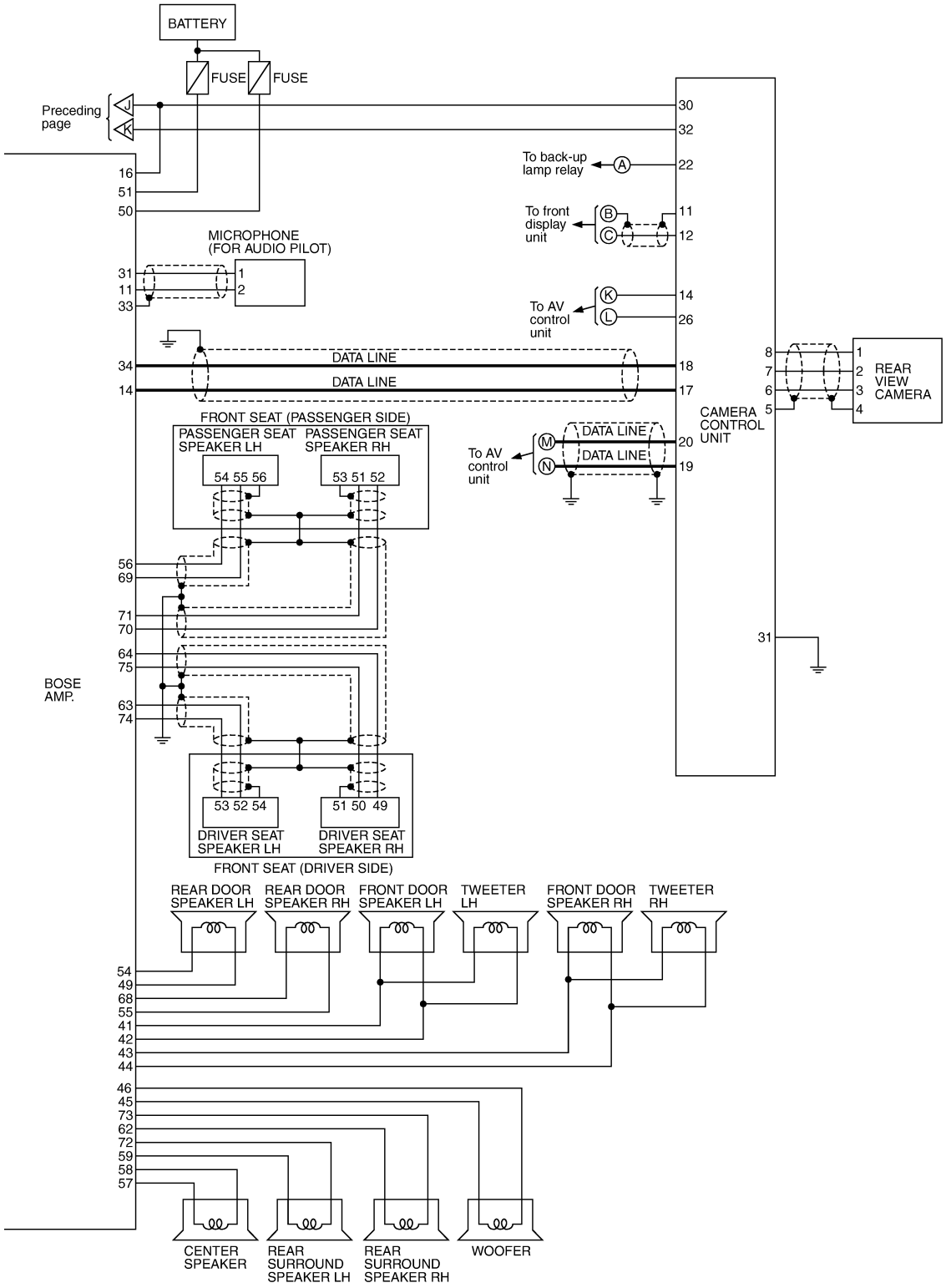
TKWT6742E

Schematic - BOSE 5.1ch Surround Audio System -

INFOID:0000000004391604




RR : With rear control switch
OR : Without rear control switch
Preceding page
Next page
REAR CONTROL SWITCH : RR
To rear sunshade system
To illumination system
REAR CONTROL CANCEL SWITCH : RR
ON
CANCEL
ILLUMI-NATION
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
DVD PLAYER
DATA LINE
BOSE AMP.
To AV control unit
iPod ADAPTER
iPod SIDE
To camera control unit
TKWT6744E



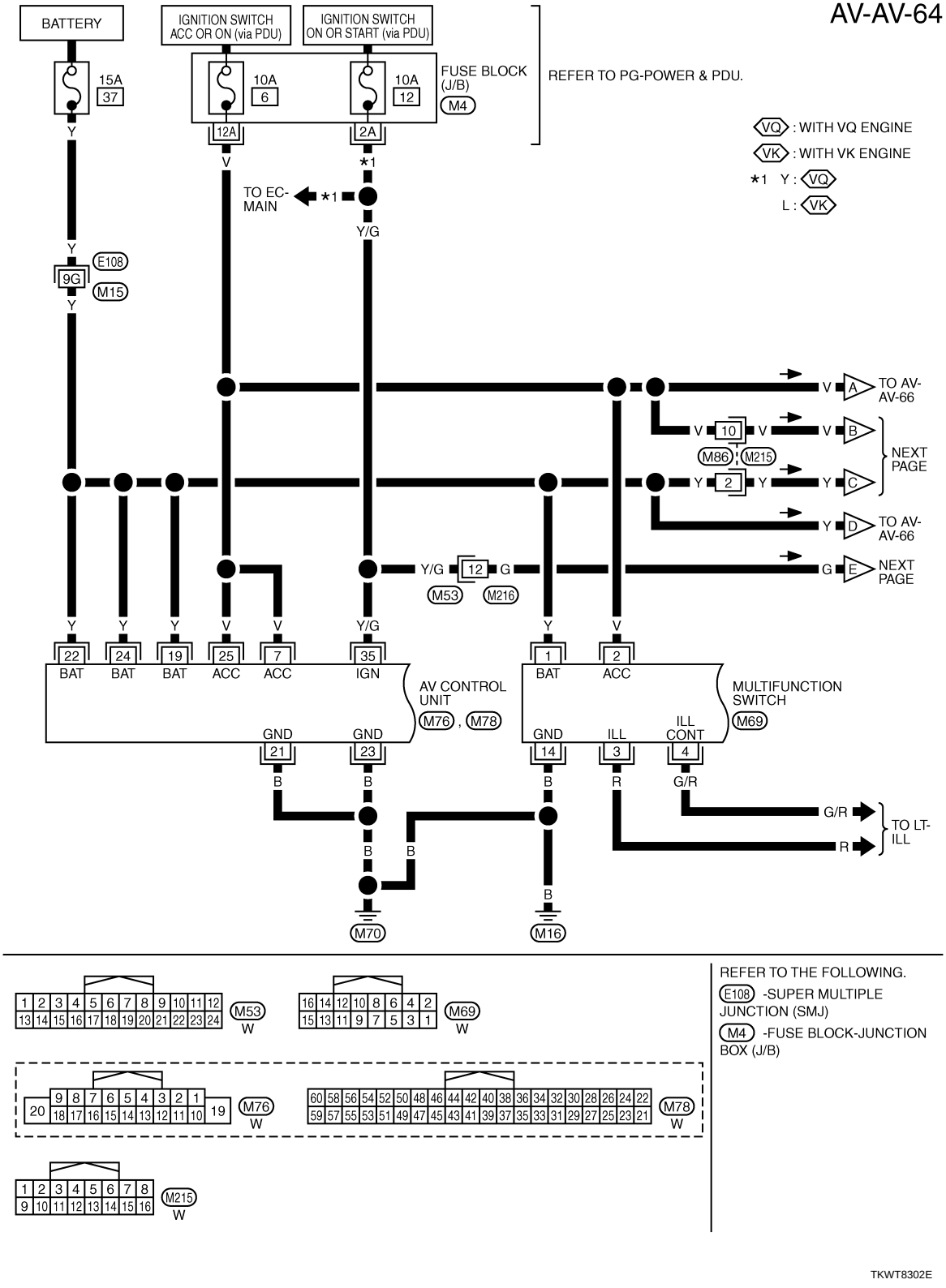
TKWT6745E

Wiring Diagram - AV - / BOSE Surround Audio 5.1ch System

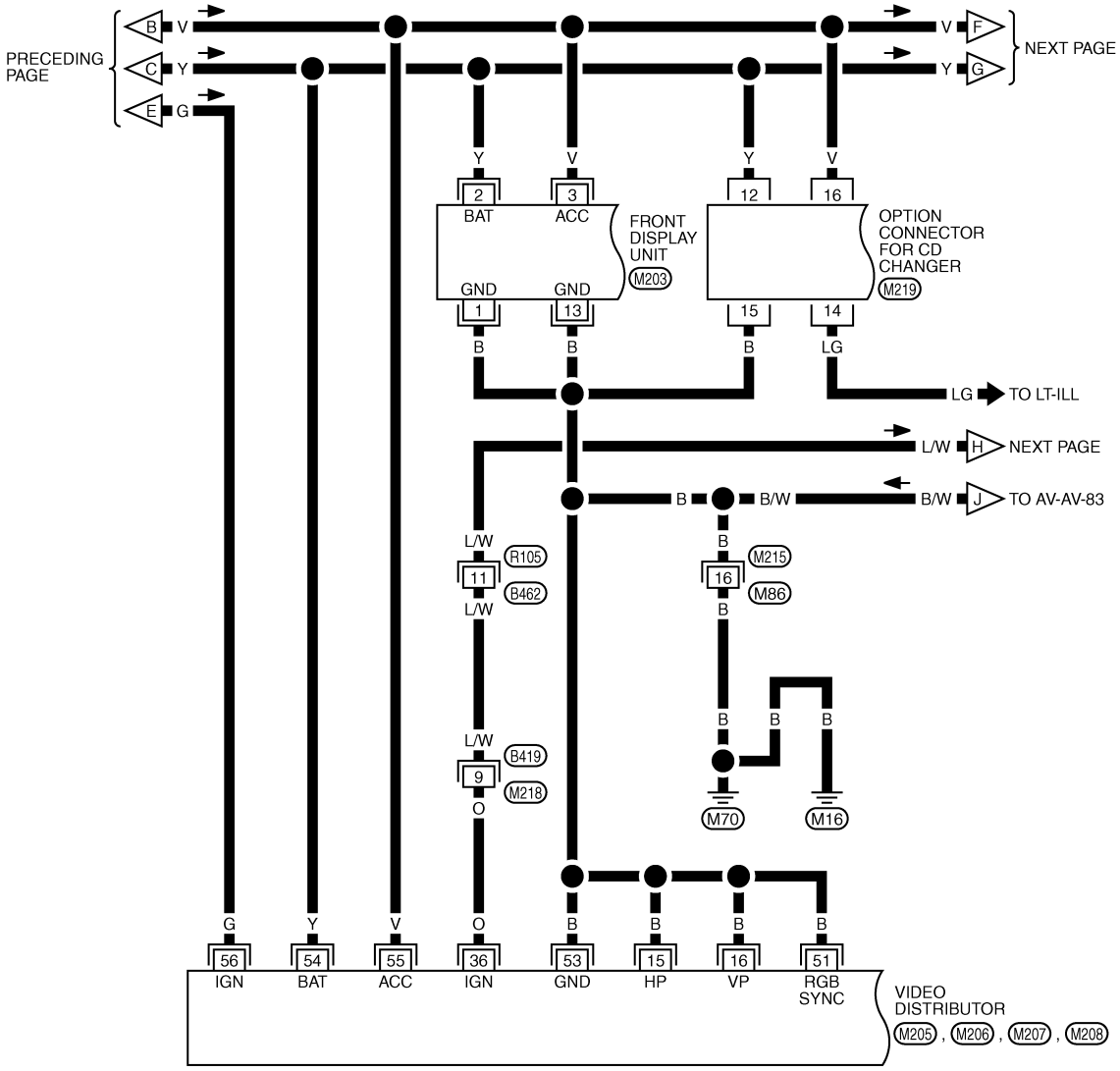
INFOID:0000000004391605

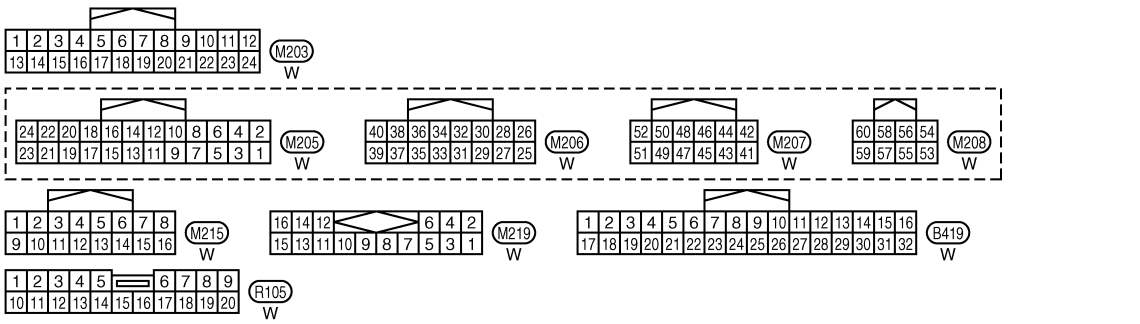
NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.



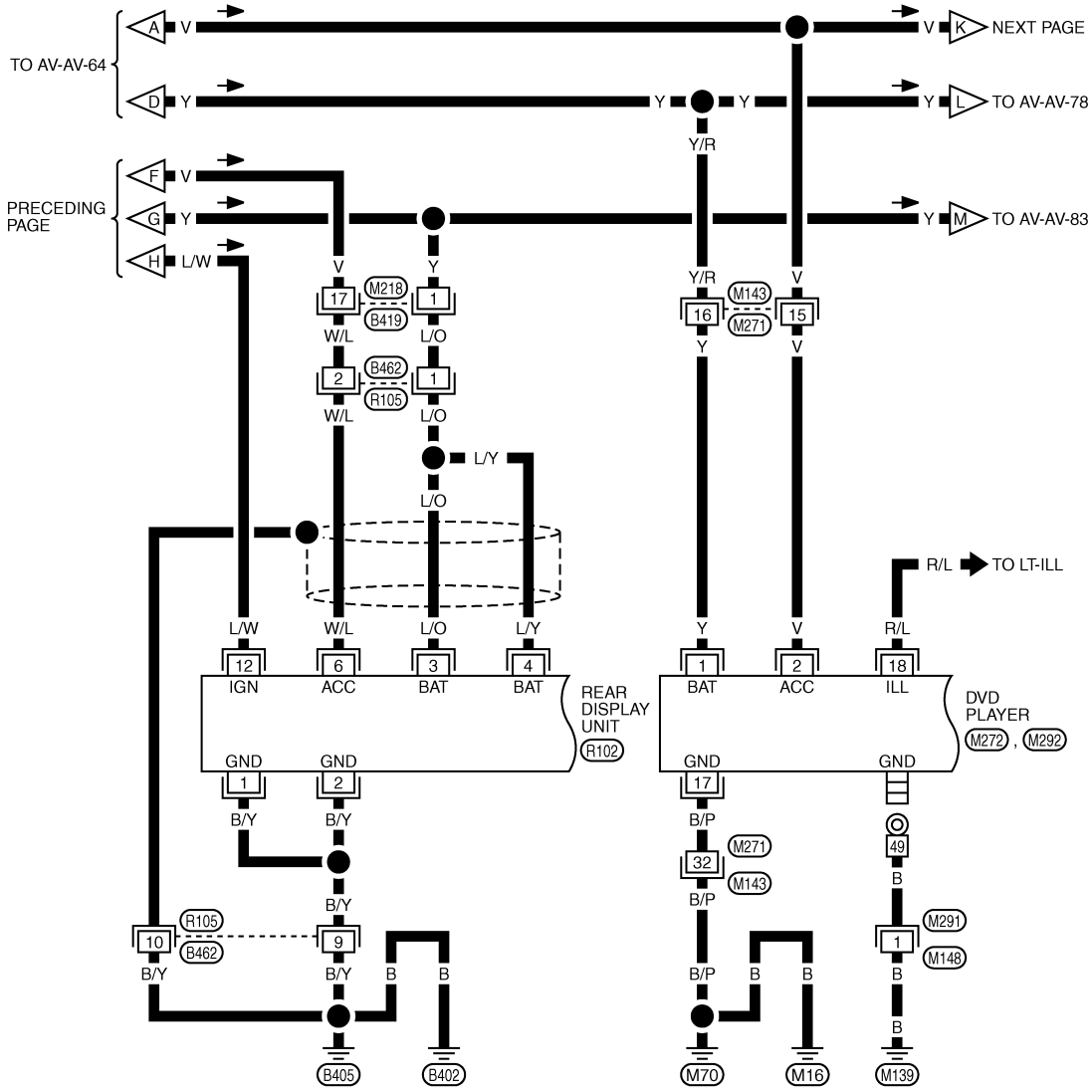
AV-AV-65

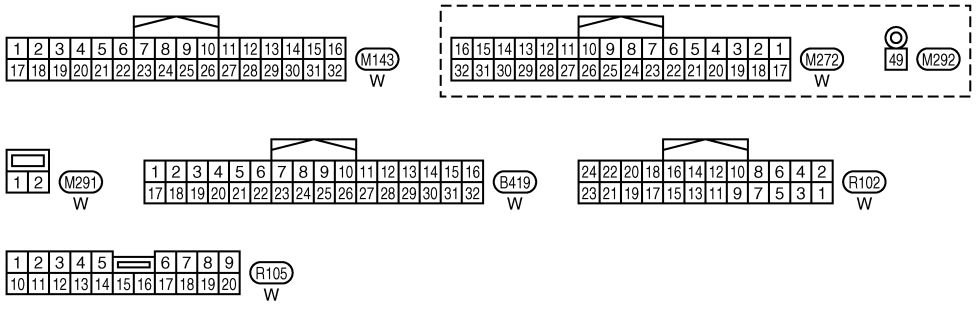




TKWT8303E

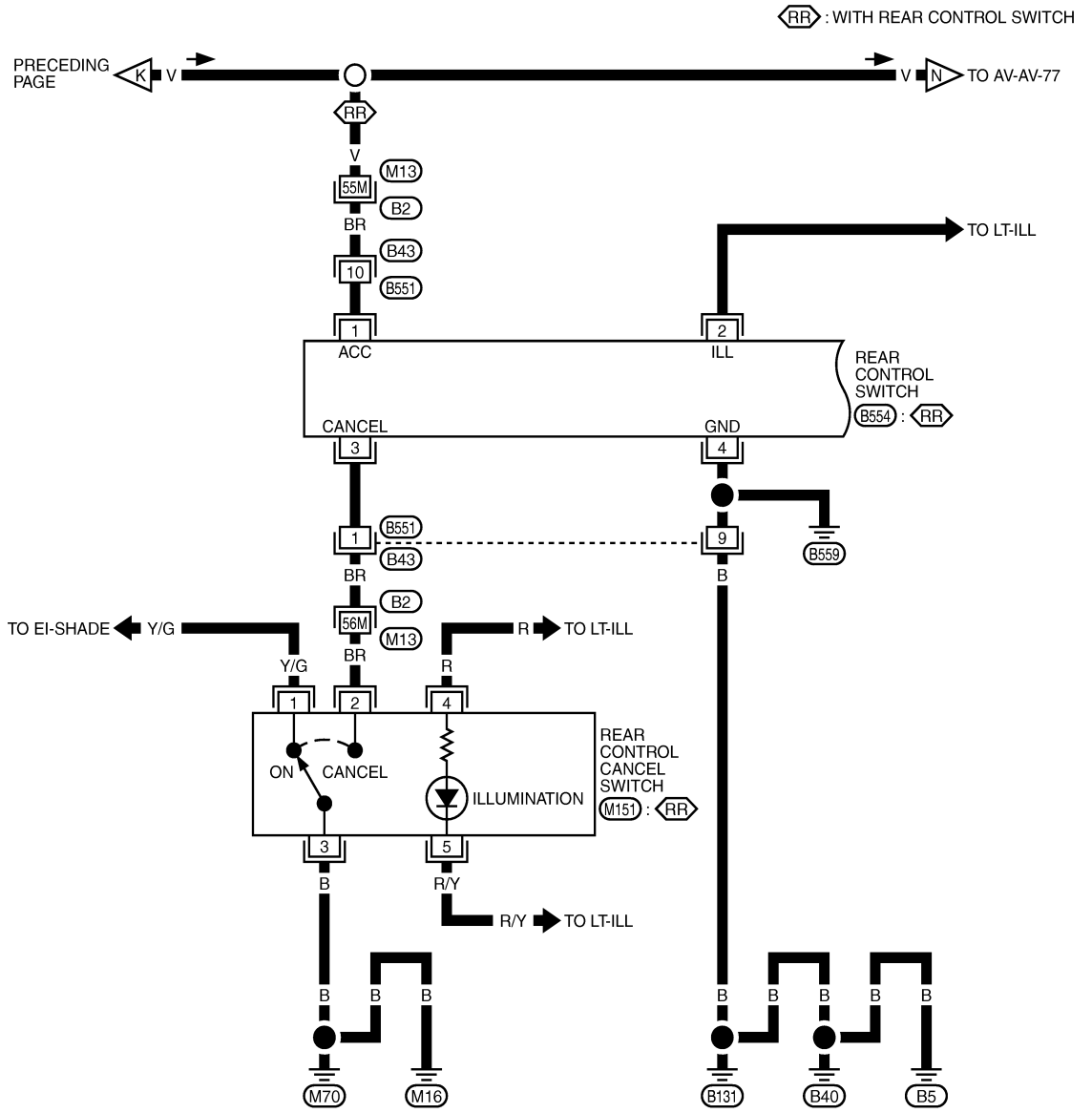
AV-AV-66

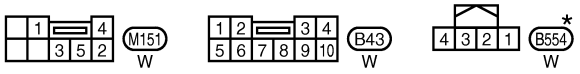




TKWT8304E

AV-AV-67



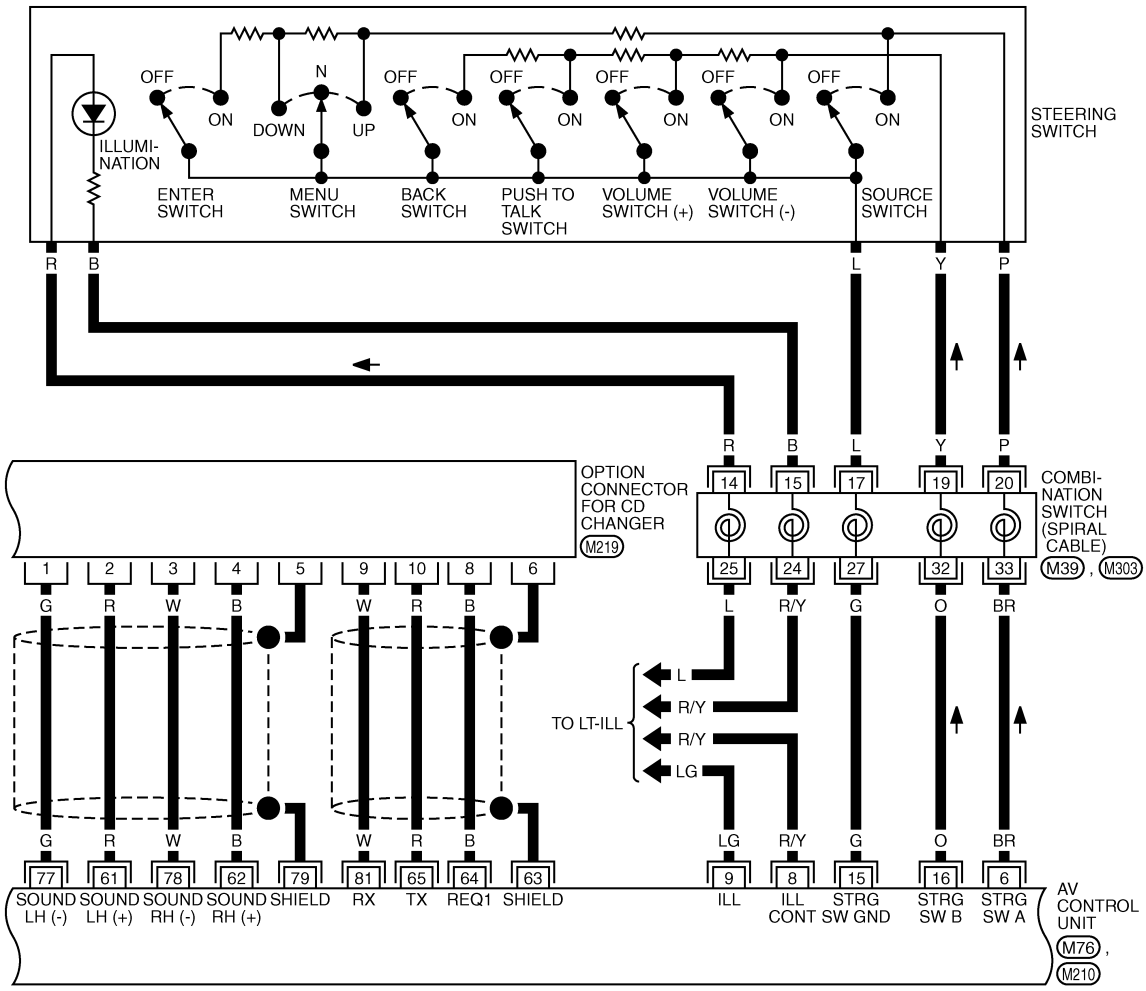


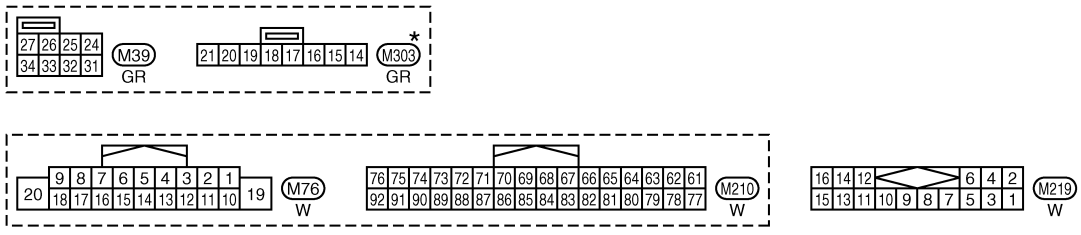
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6749E

AV-AV-68

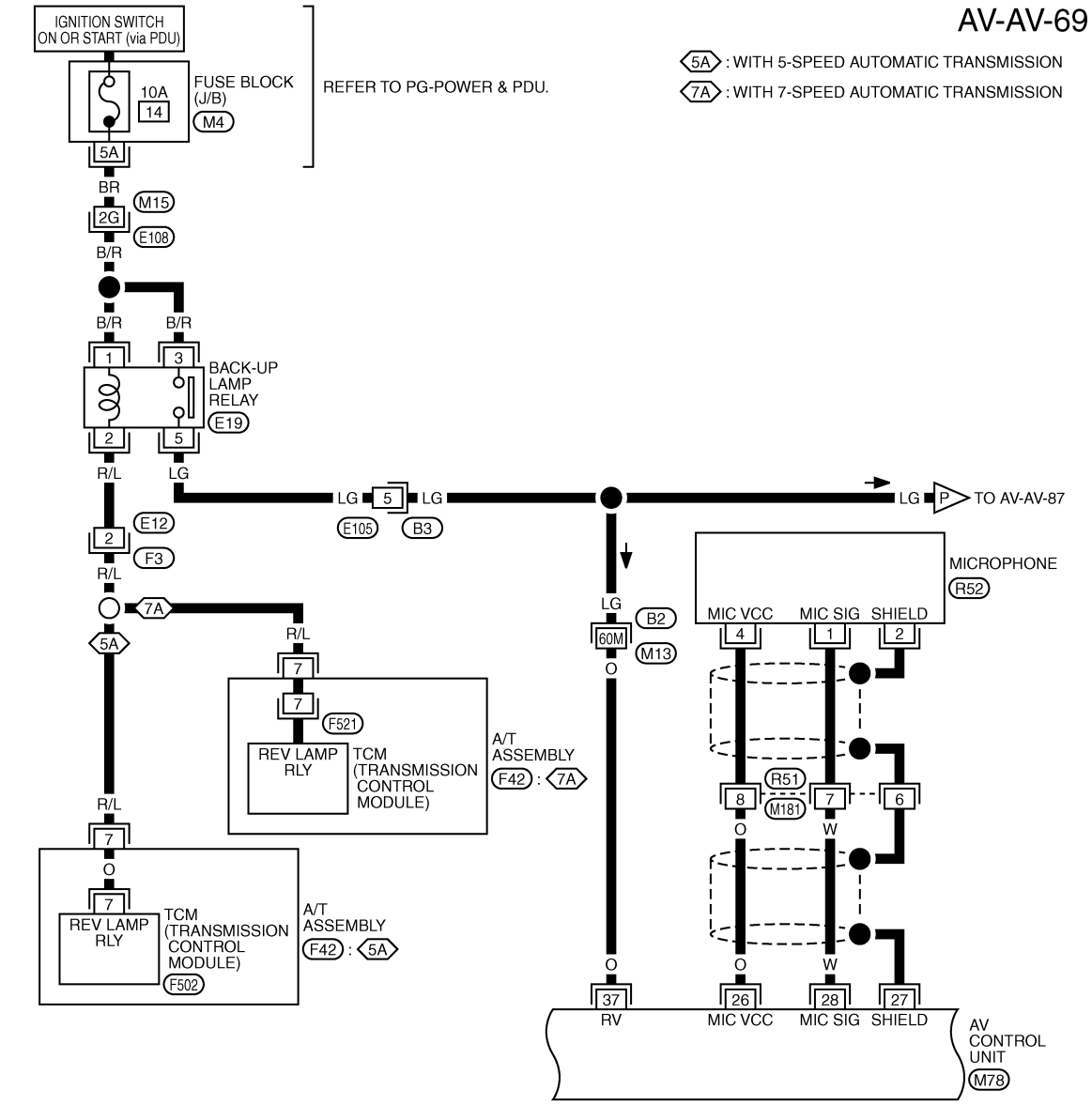


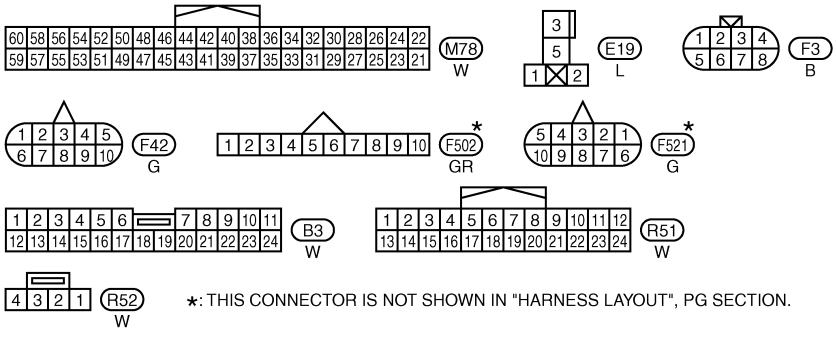


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8305E

AV-AV-69

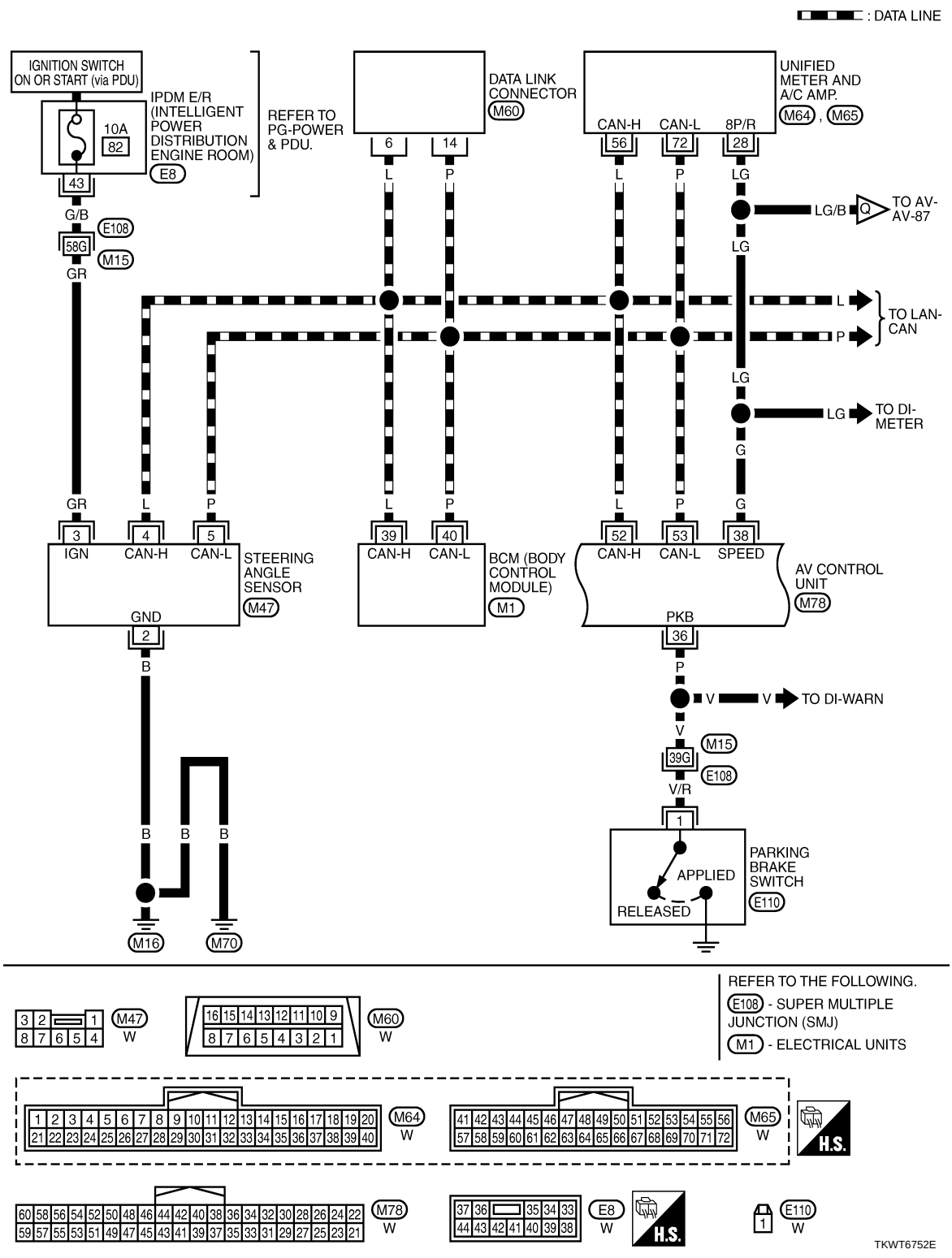




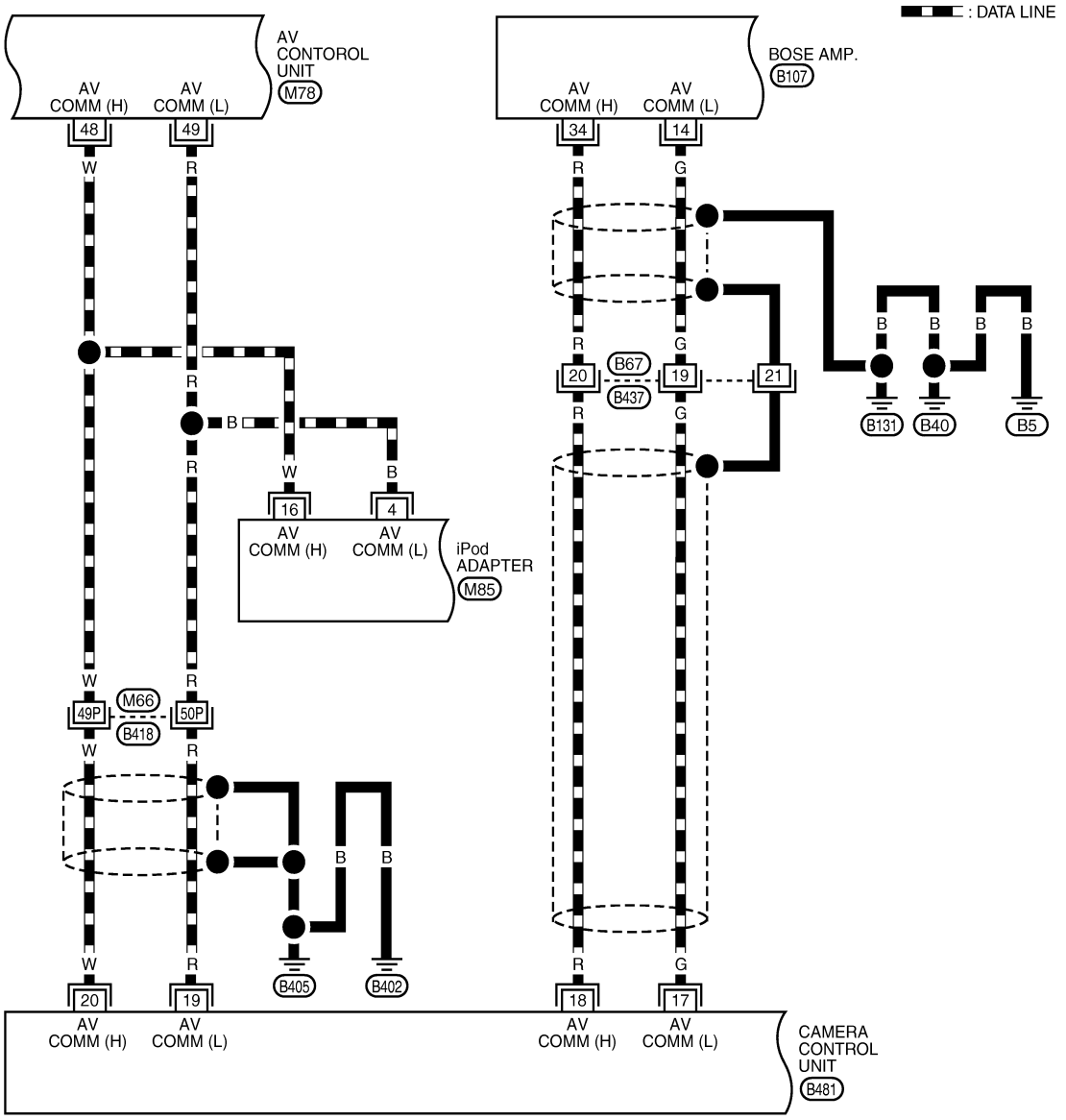
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

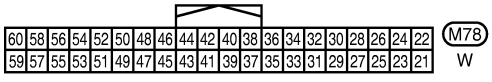
TKWT8306E

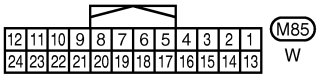
AV-AV-70

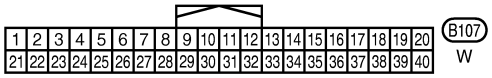

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56 72 28
G/B
E108
58G
M15
GR
L P L P LG
LG/B Q TO AV-AV-87
LG
L P TO LAN-CAN
LG LG TO DI-METER
G
GR L P L P L P G
3 4 5 39 40 52 53 38
IGN CAN-H CAN-L
STEERING ANGLE SENSOR M47
CAN-H CAN-L
BCM (BODY CONTROL MODULE) M1
CAN-H CAN-L SPEED
AV CONTROL UNIT M78
GND 2
PKB 36
B
P
V V TO DI-WARN
V
M15
39G
E108
V/R
1
PARKING BRAKE SWITCH E110
APPLIED
RELEASED
B B B
M16 M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47 W
M60 W
M64 W
M65 W
H.S.
M78 W
E8 W
E110 W
TKWT6752E

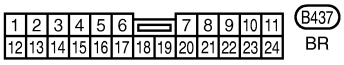
AV-AV-71

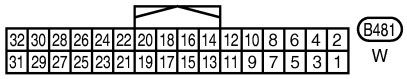








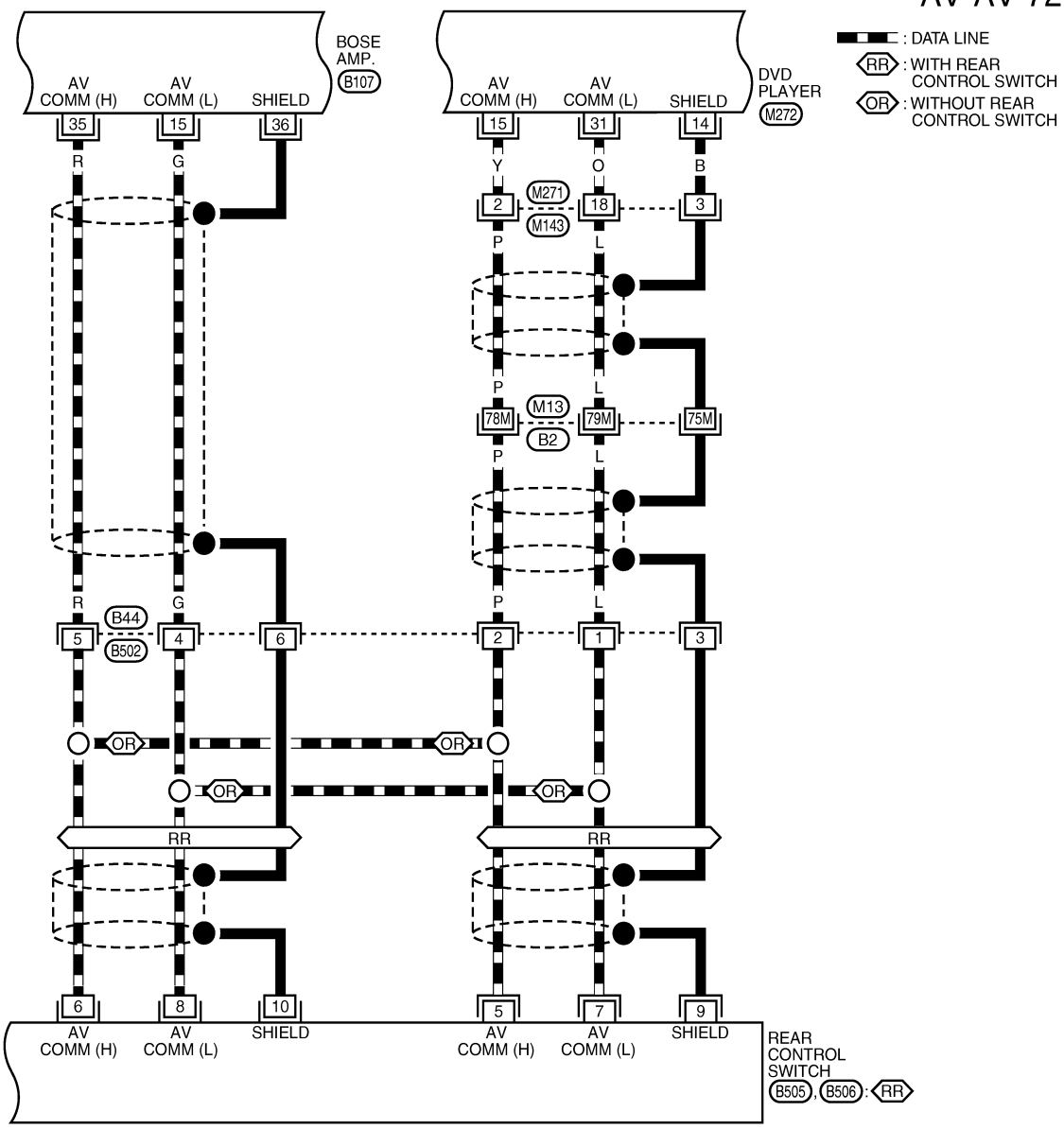


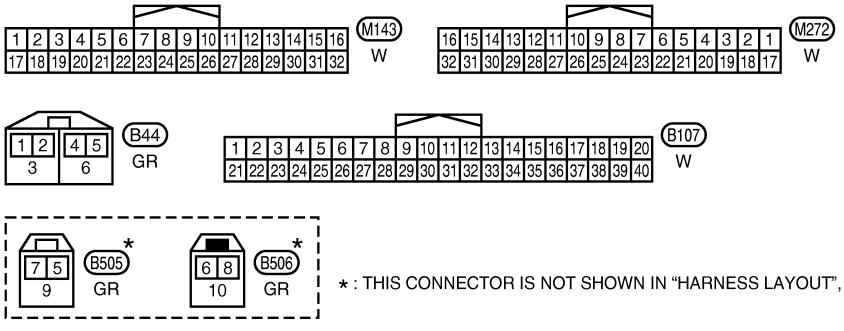


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6753E

AV-AV-72



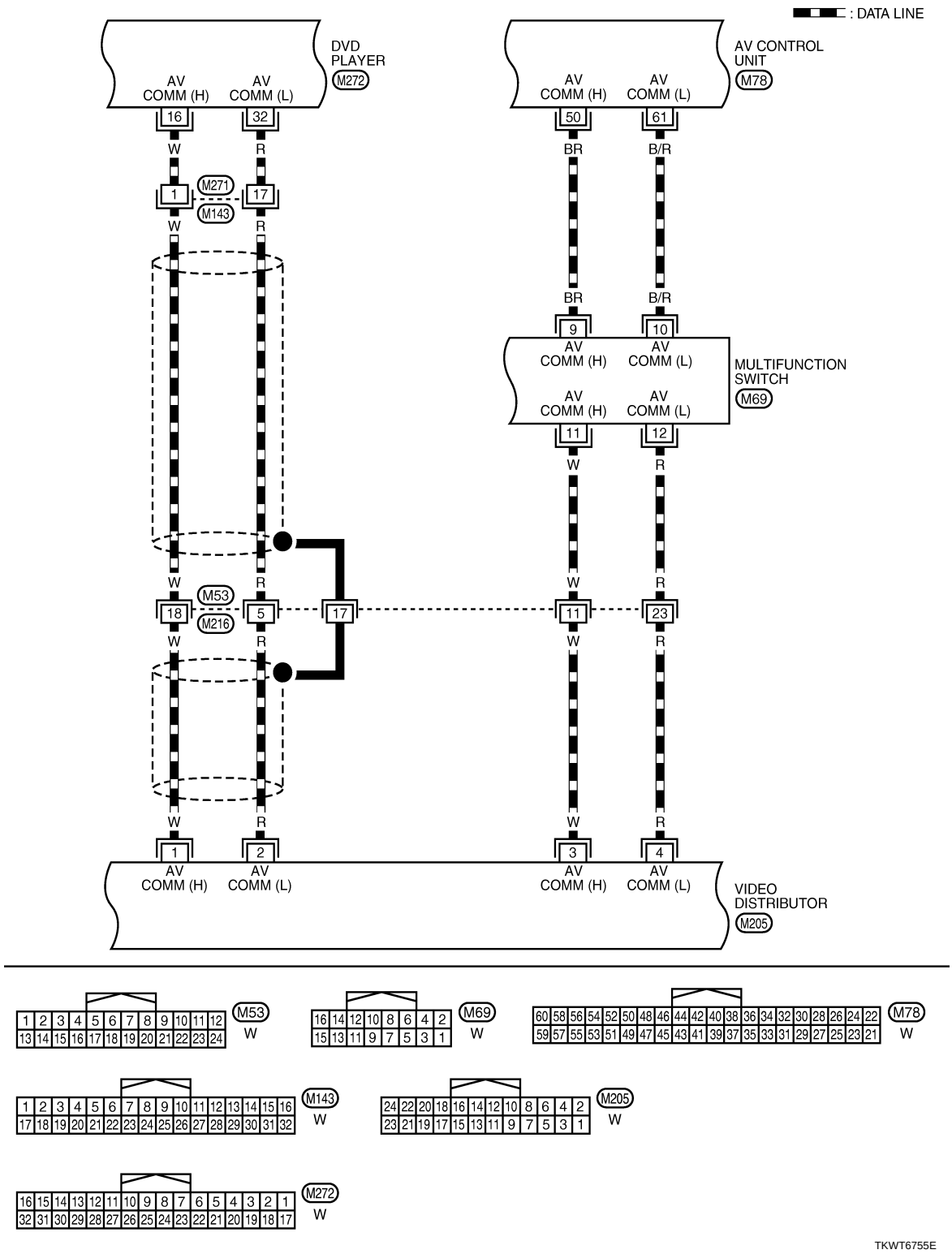


REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.

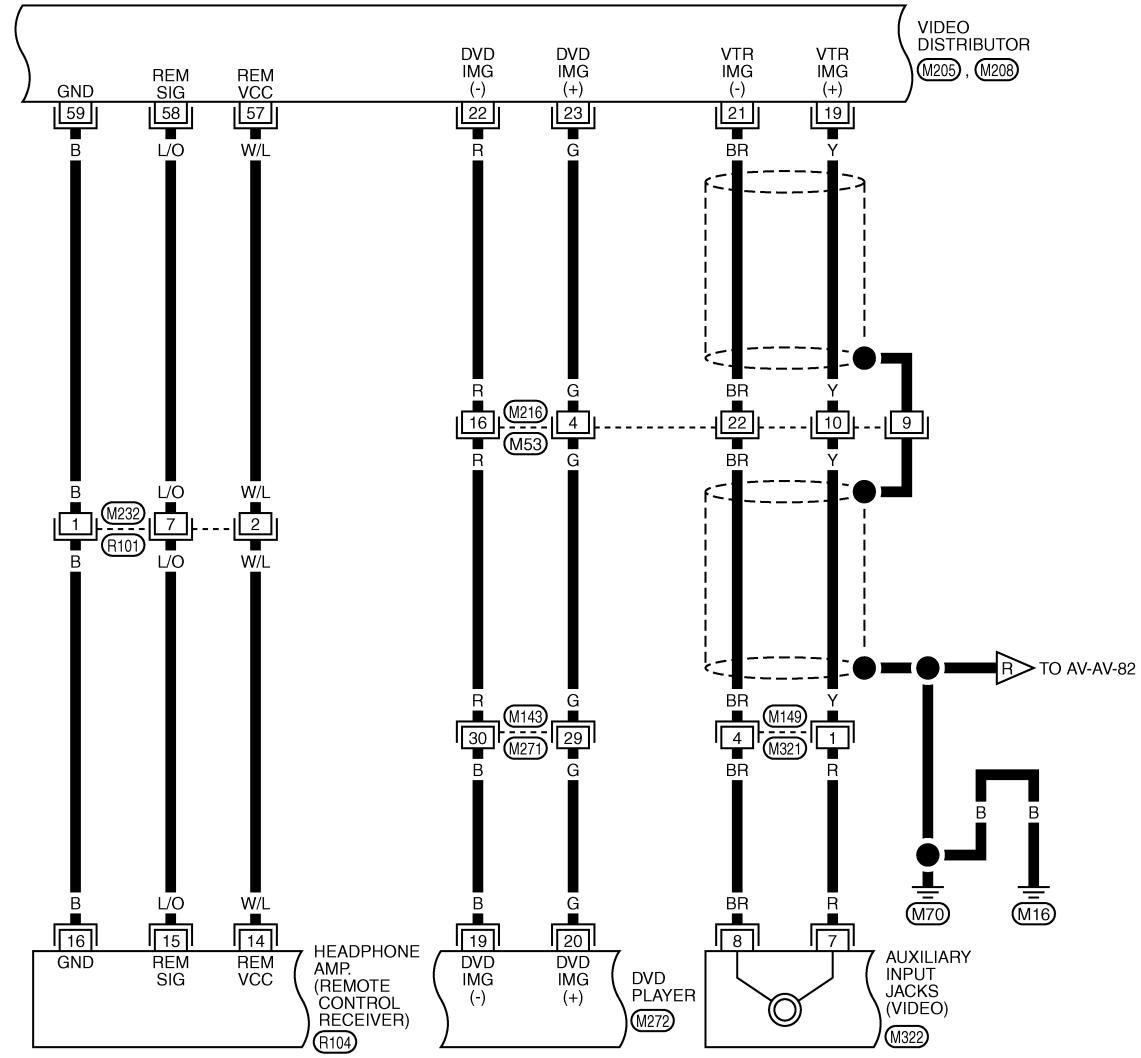
TKWT6754E

AV-AV-73



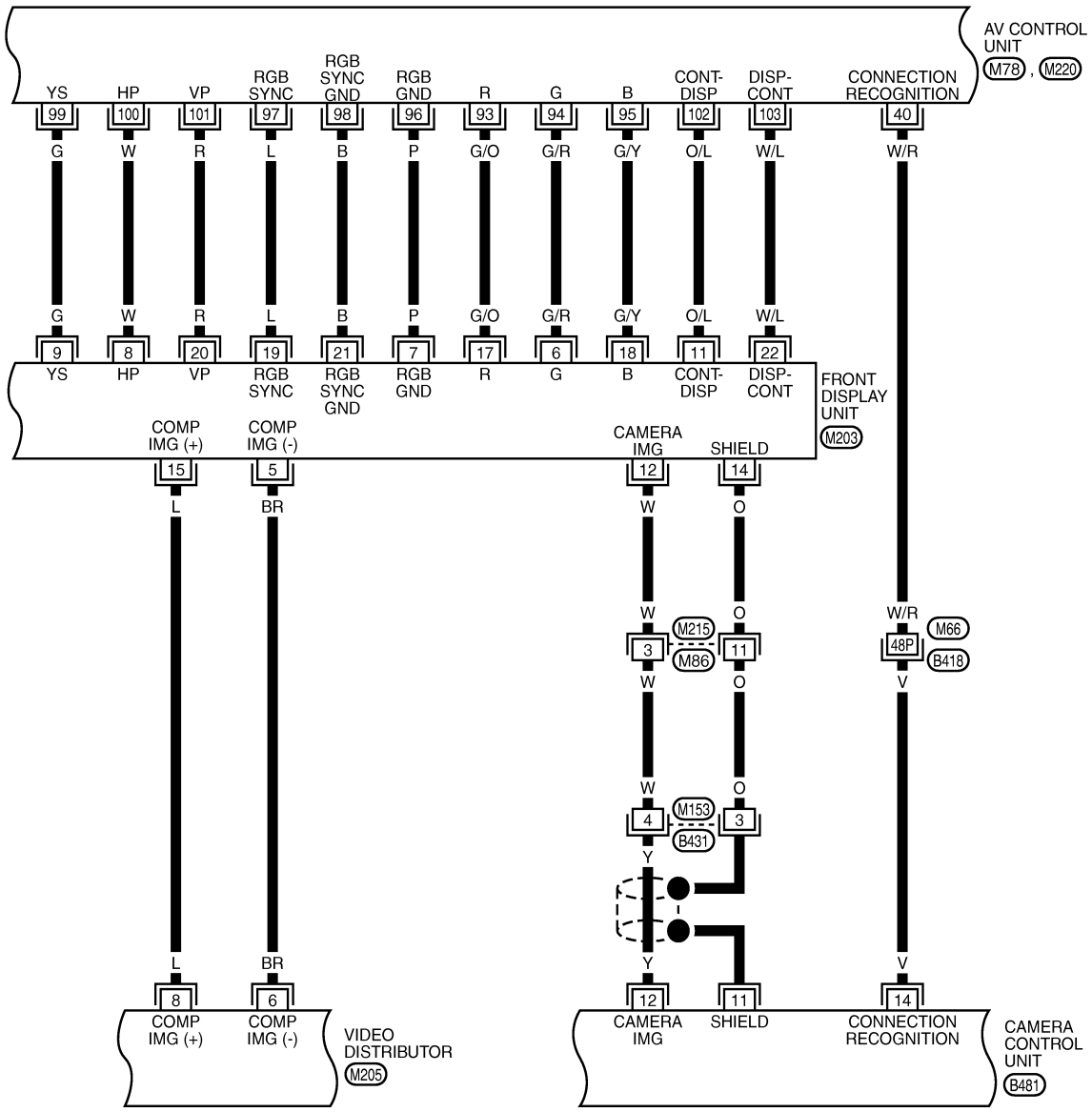
TKWT6755E

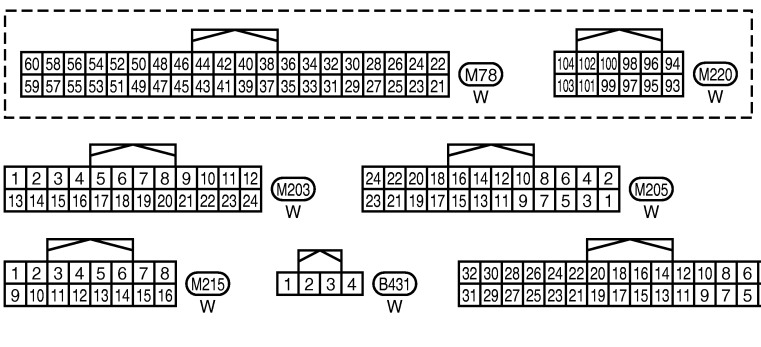
AV-AV-74



TKWT8307E

AV-AV-75

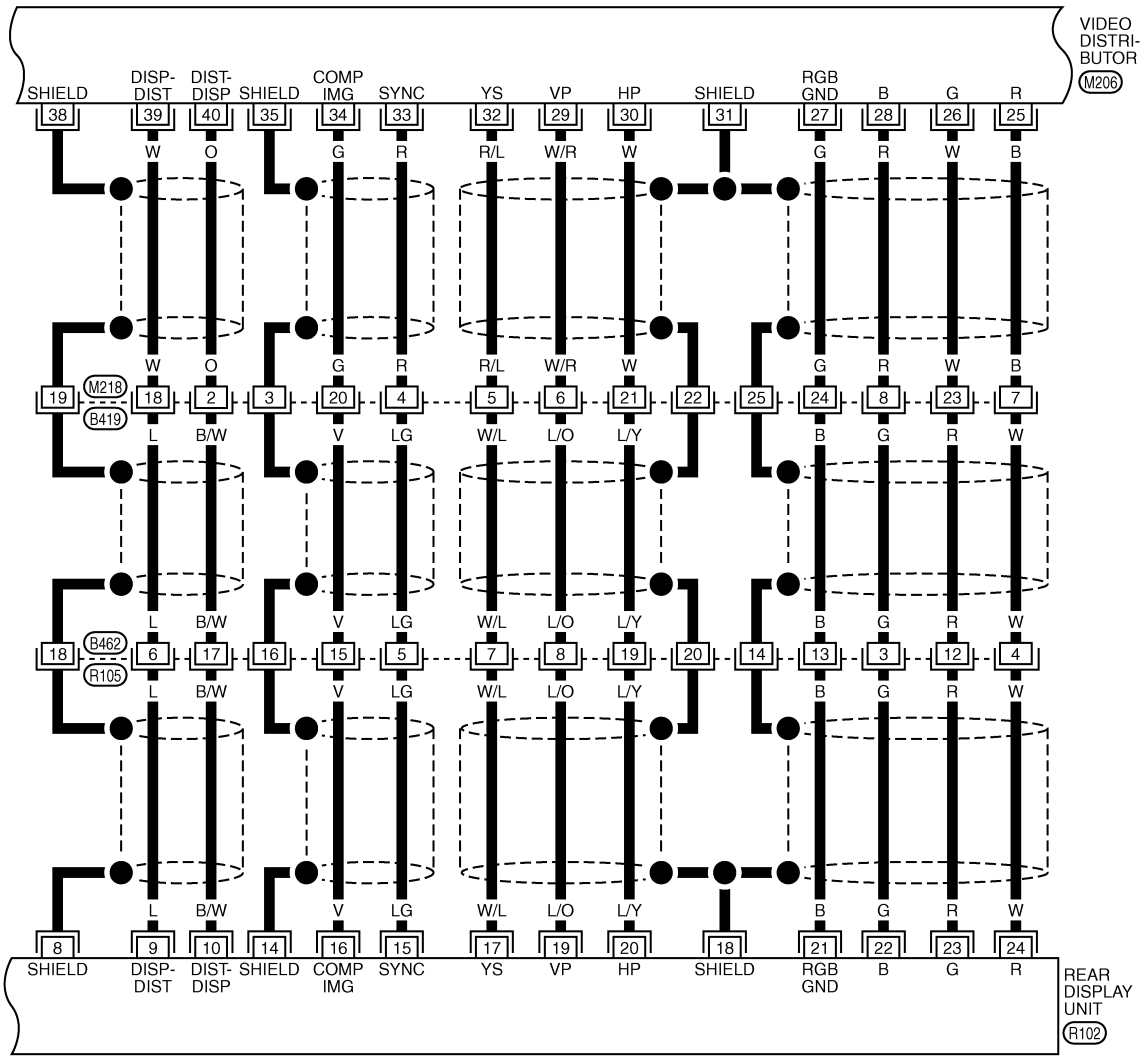


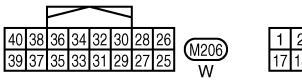


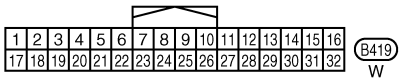
REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

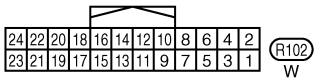
TKWT6757E

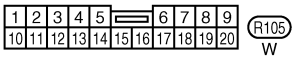
AV-AV-76





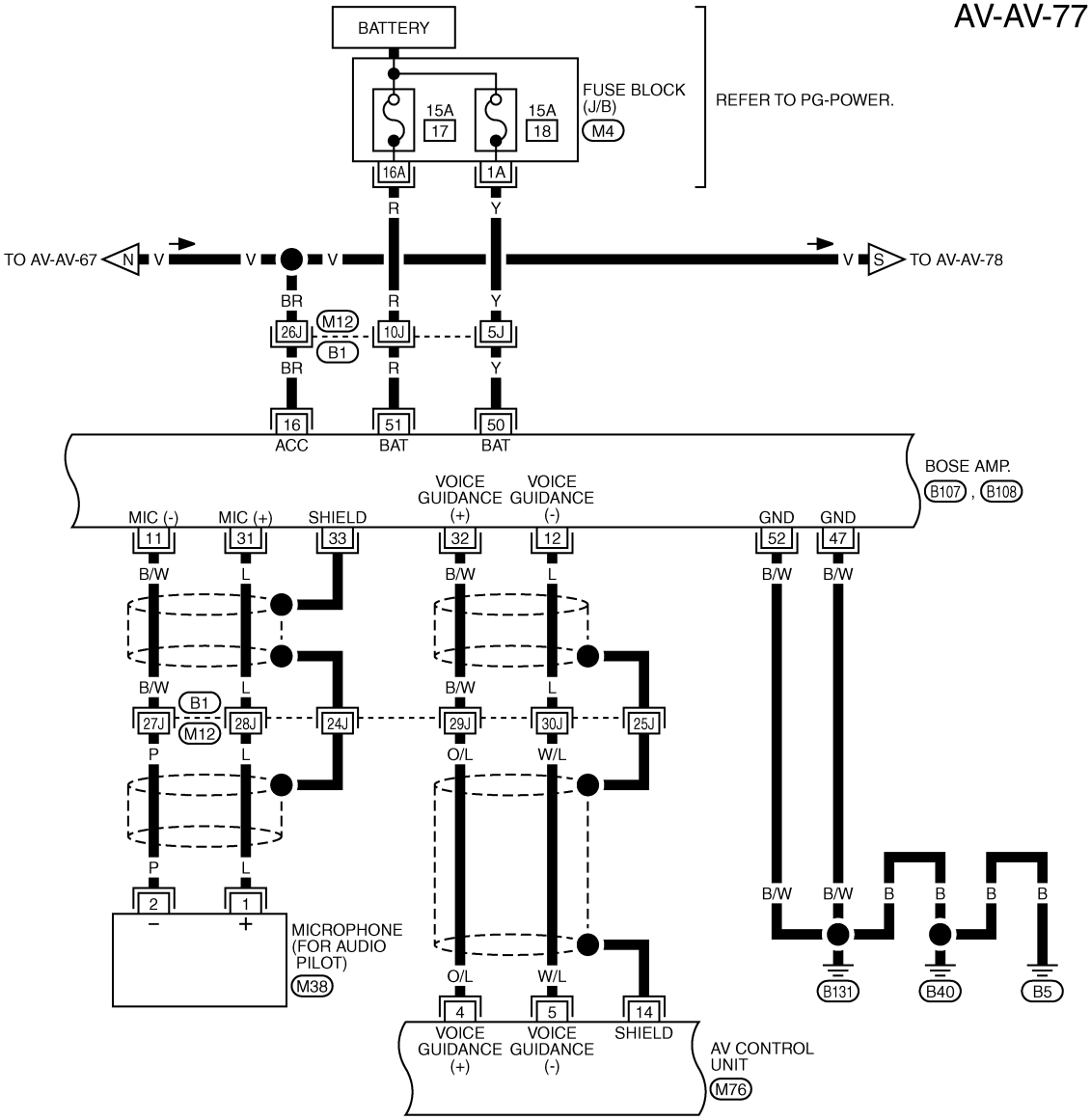


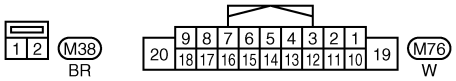


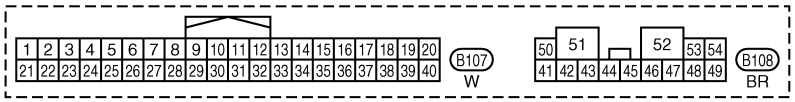


TKWT5152E

AV-AV-77



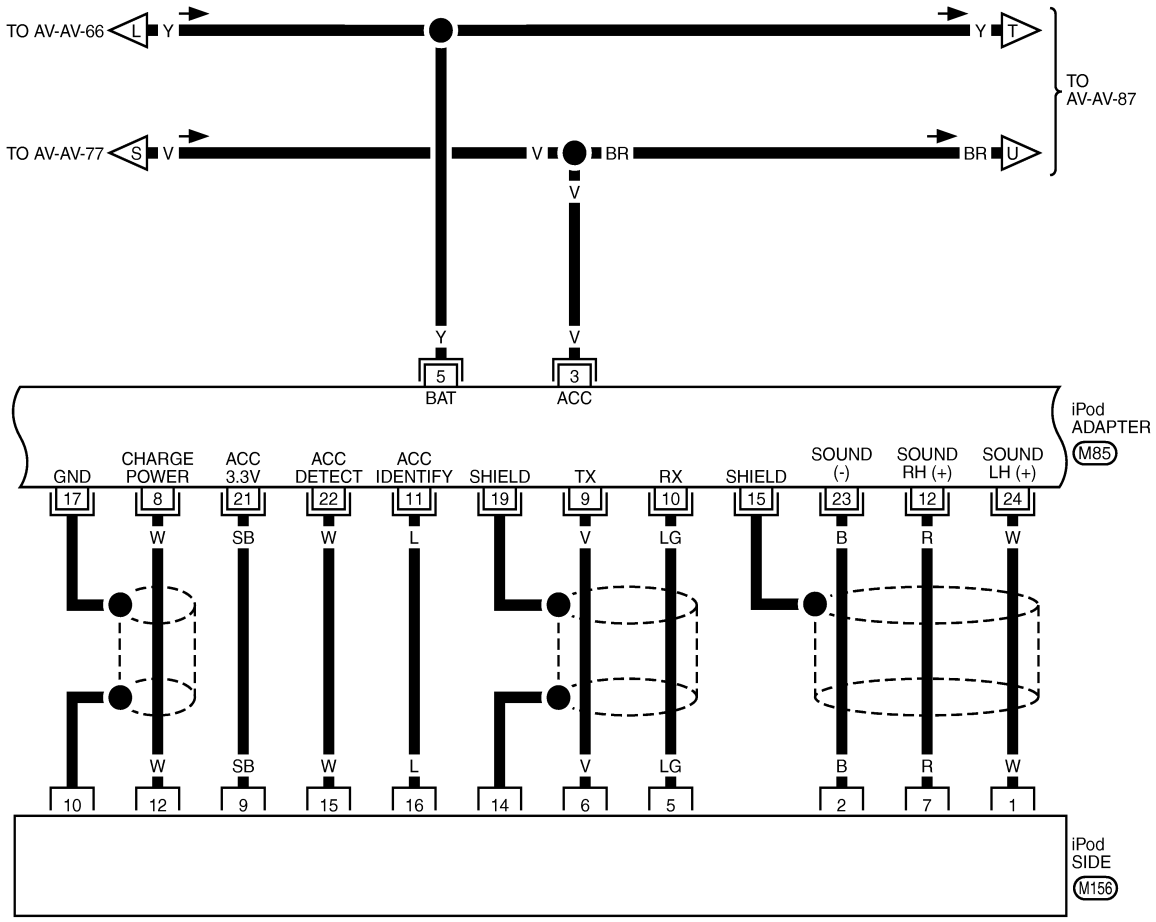


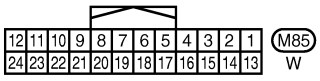


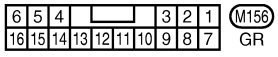
REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8308E

AV-AV-78

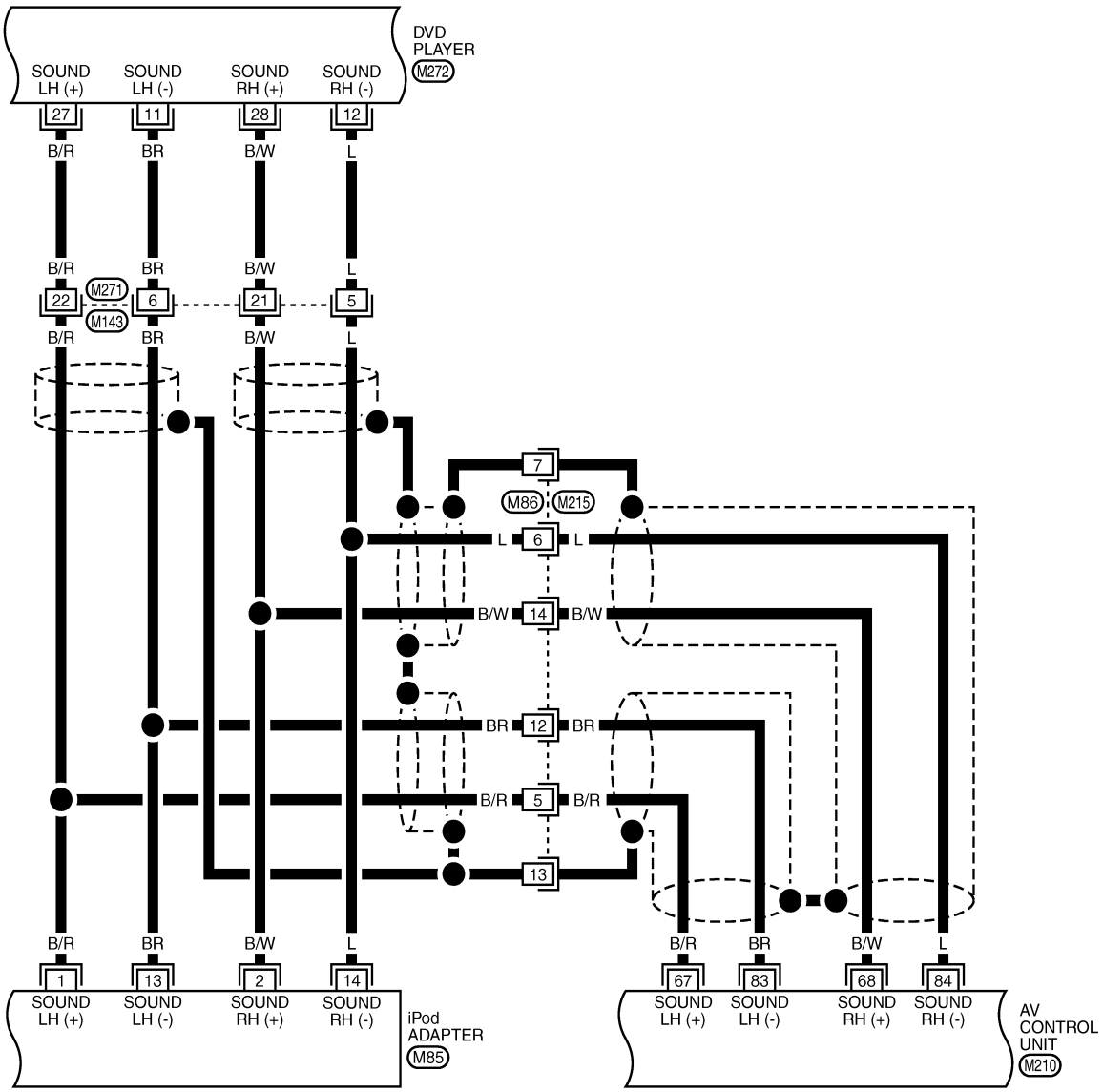


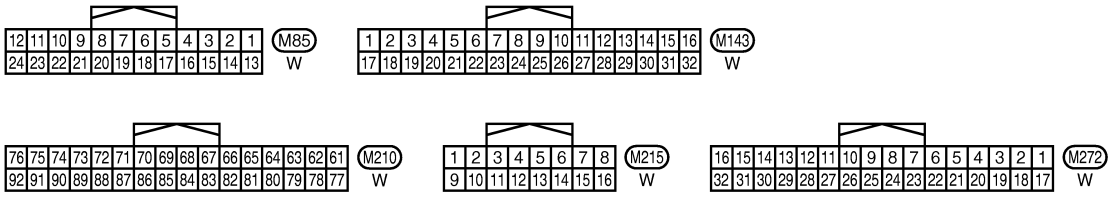




TKWT6761E

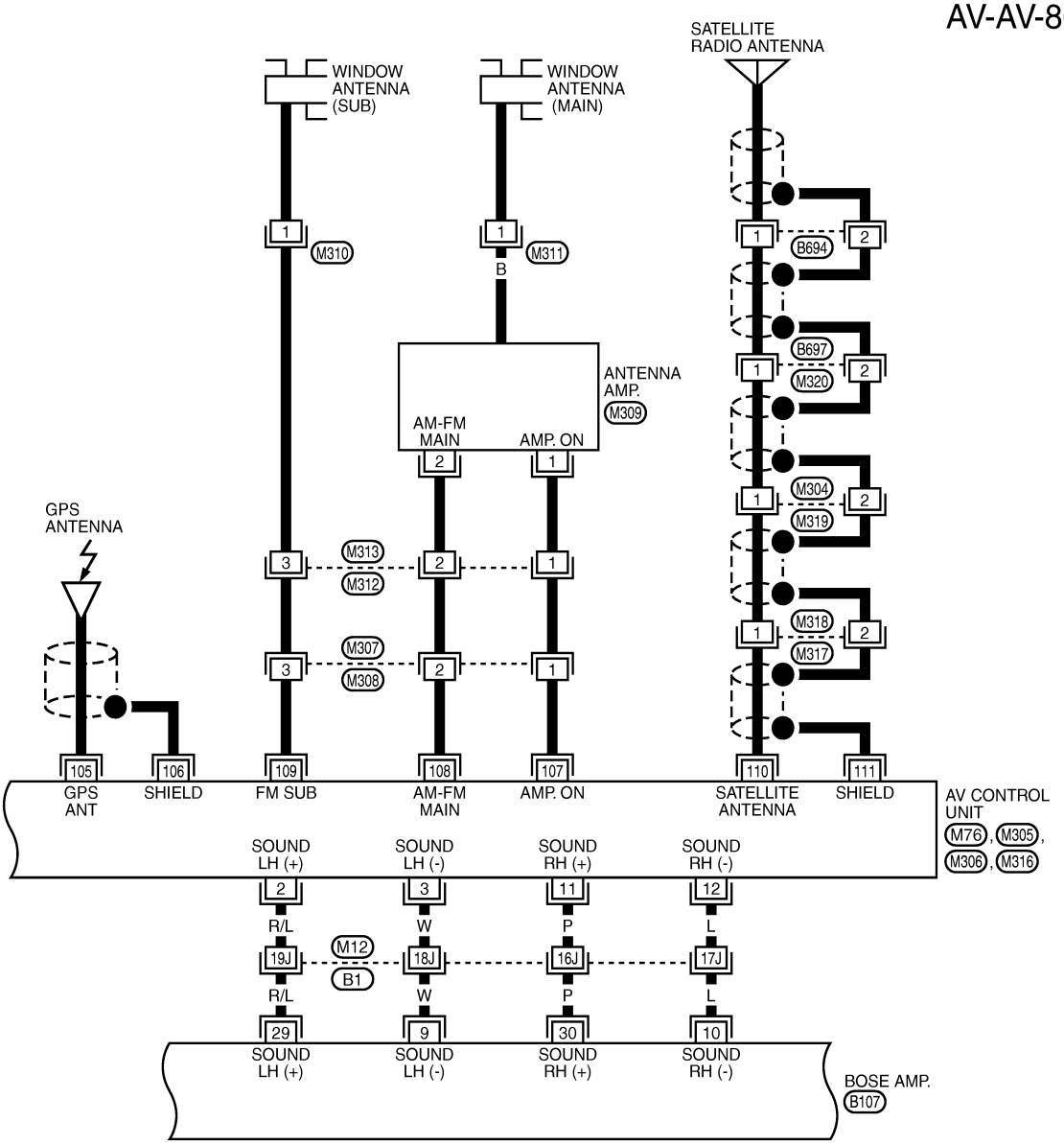
AV-AV-79

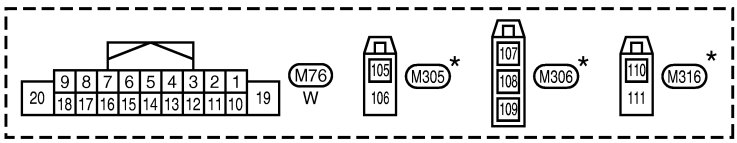




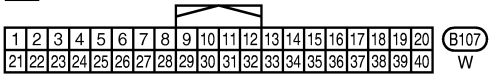
TKWT6762E

AV-AV-80





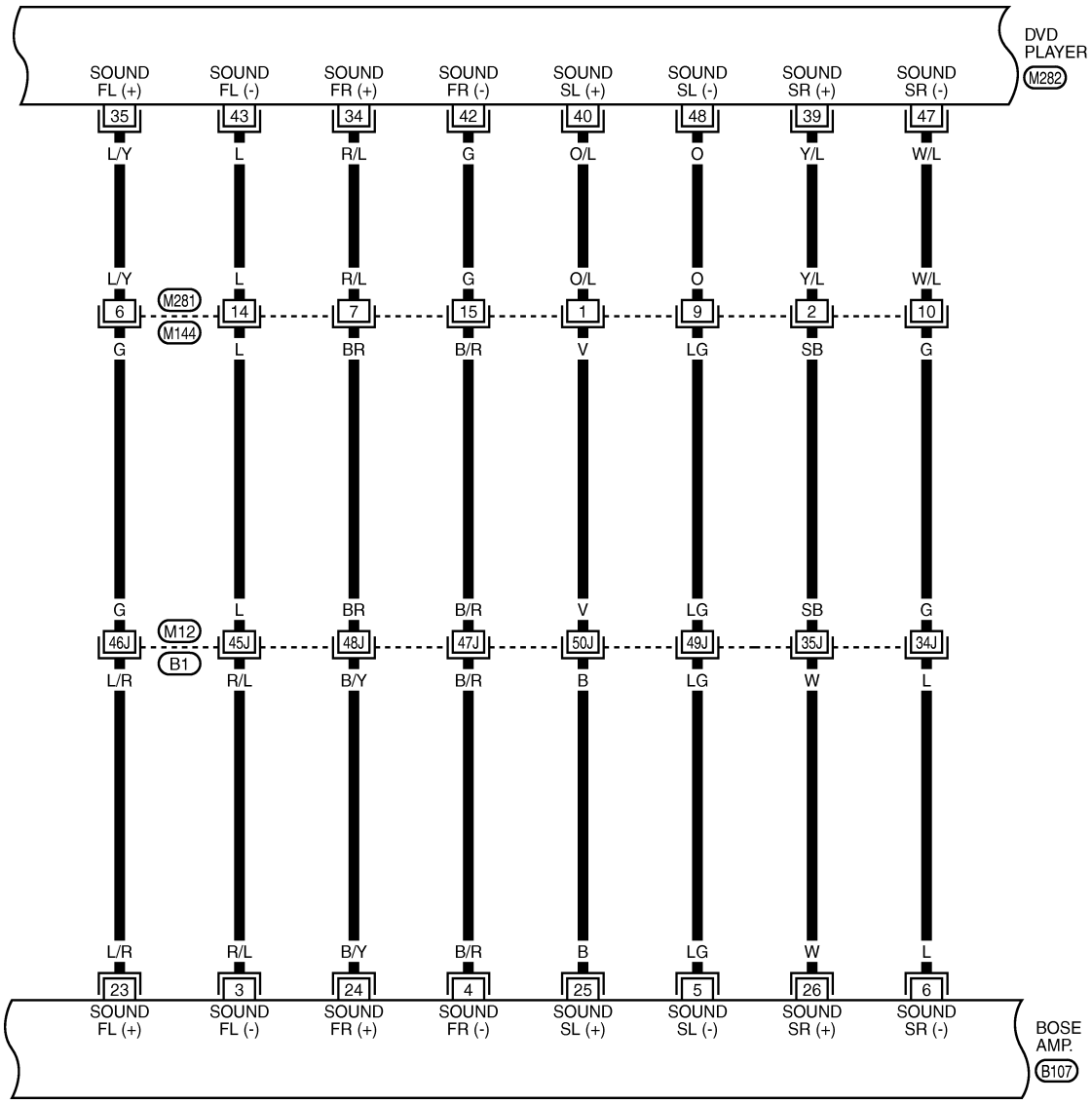
REFER TO THE FOLLOWING.
(B1) - SUPER MULTIPLE JUNCTION (SMJ)

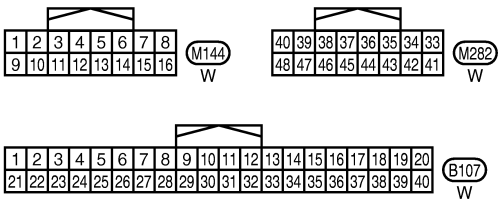


* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6763E

AV-AV-81

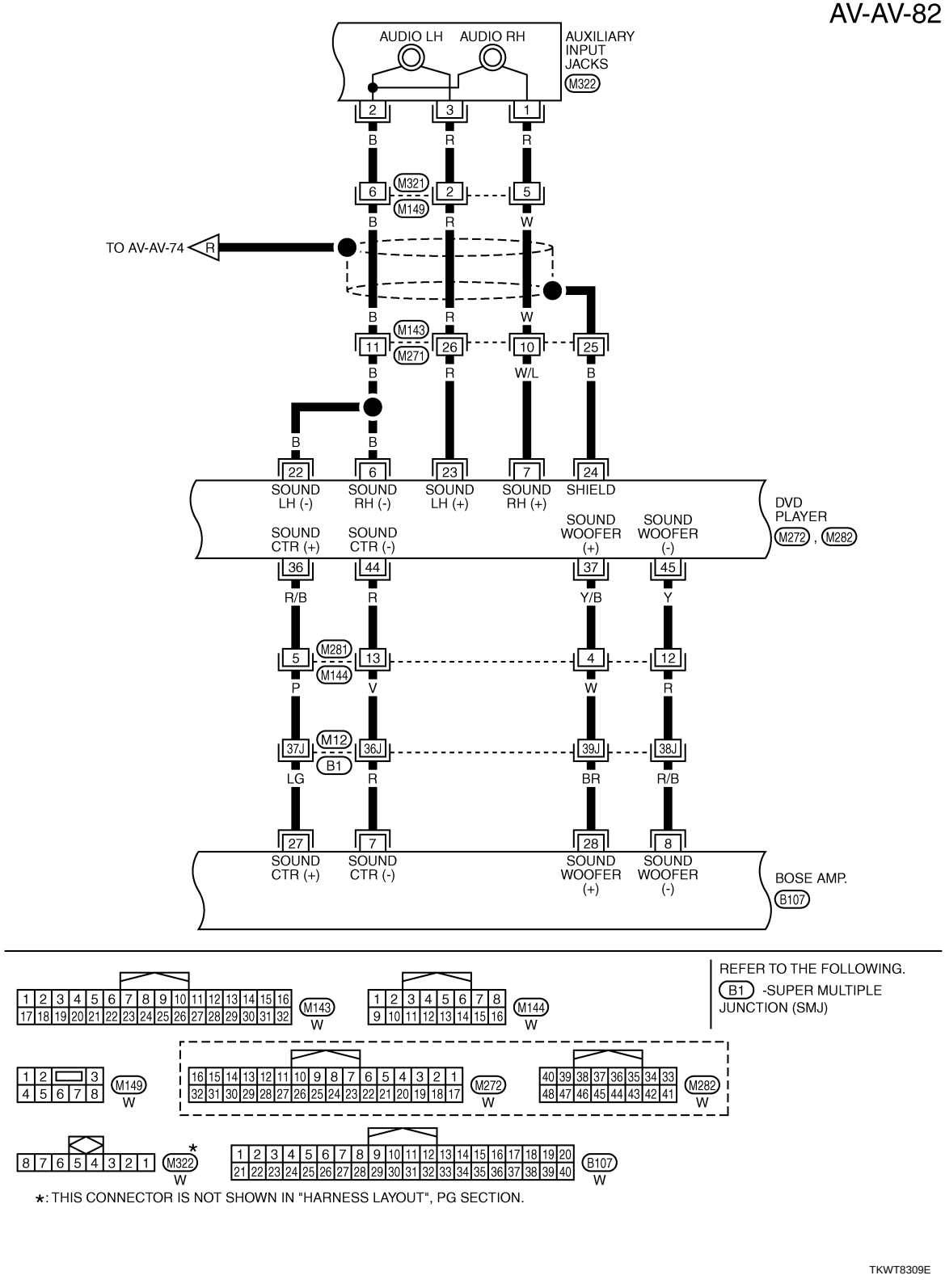




REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

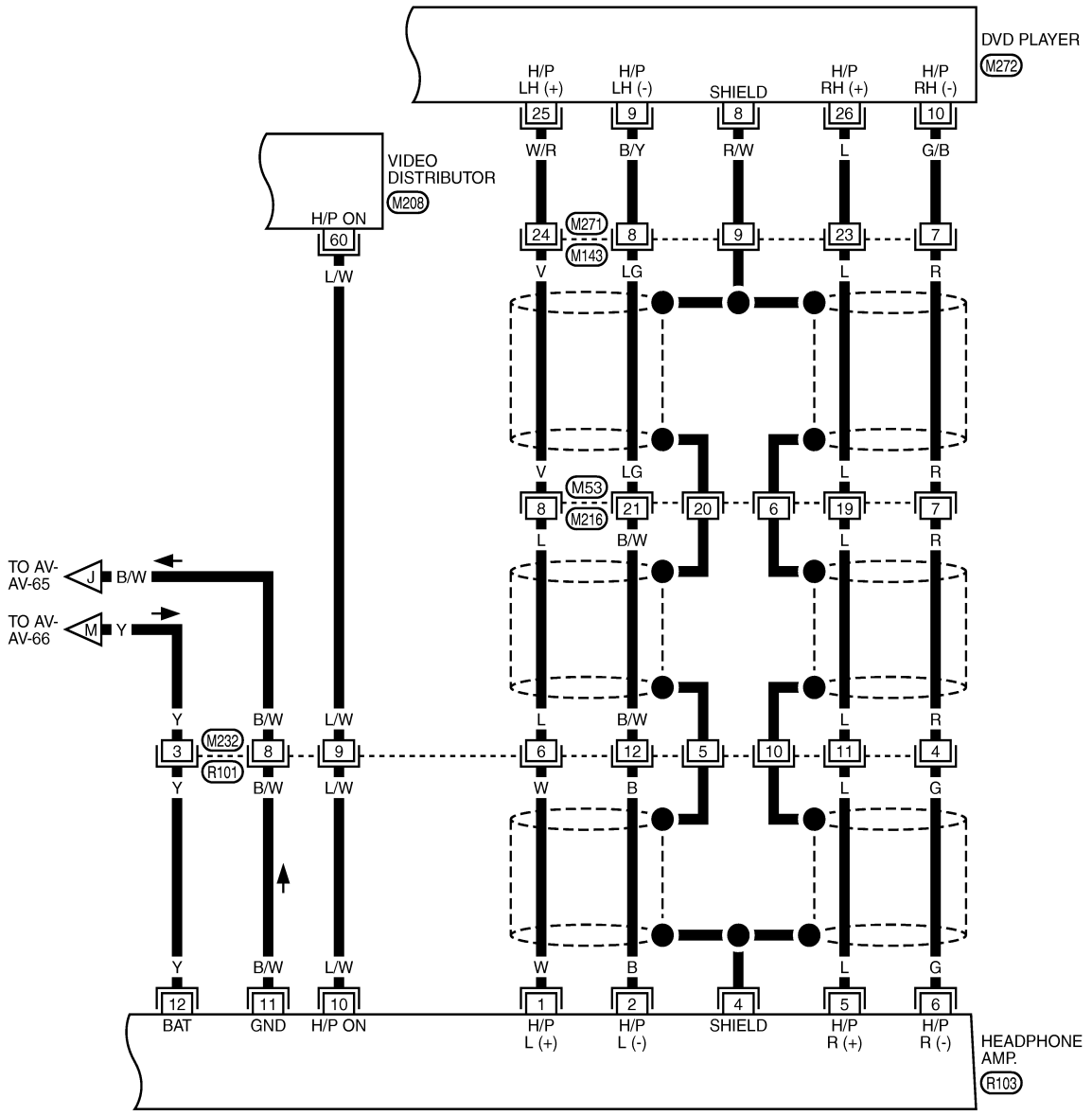
TKWT6764E

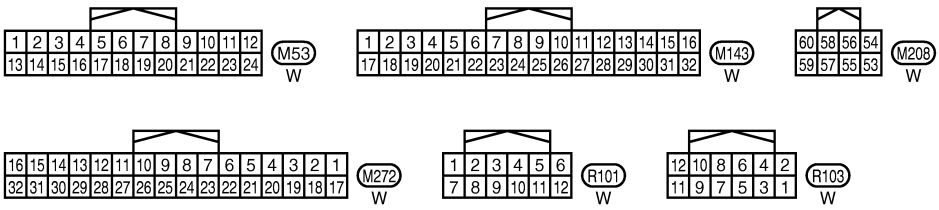
AV-AV-82



TKWT8309E

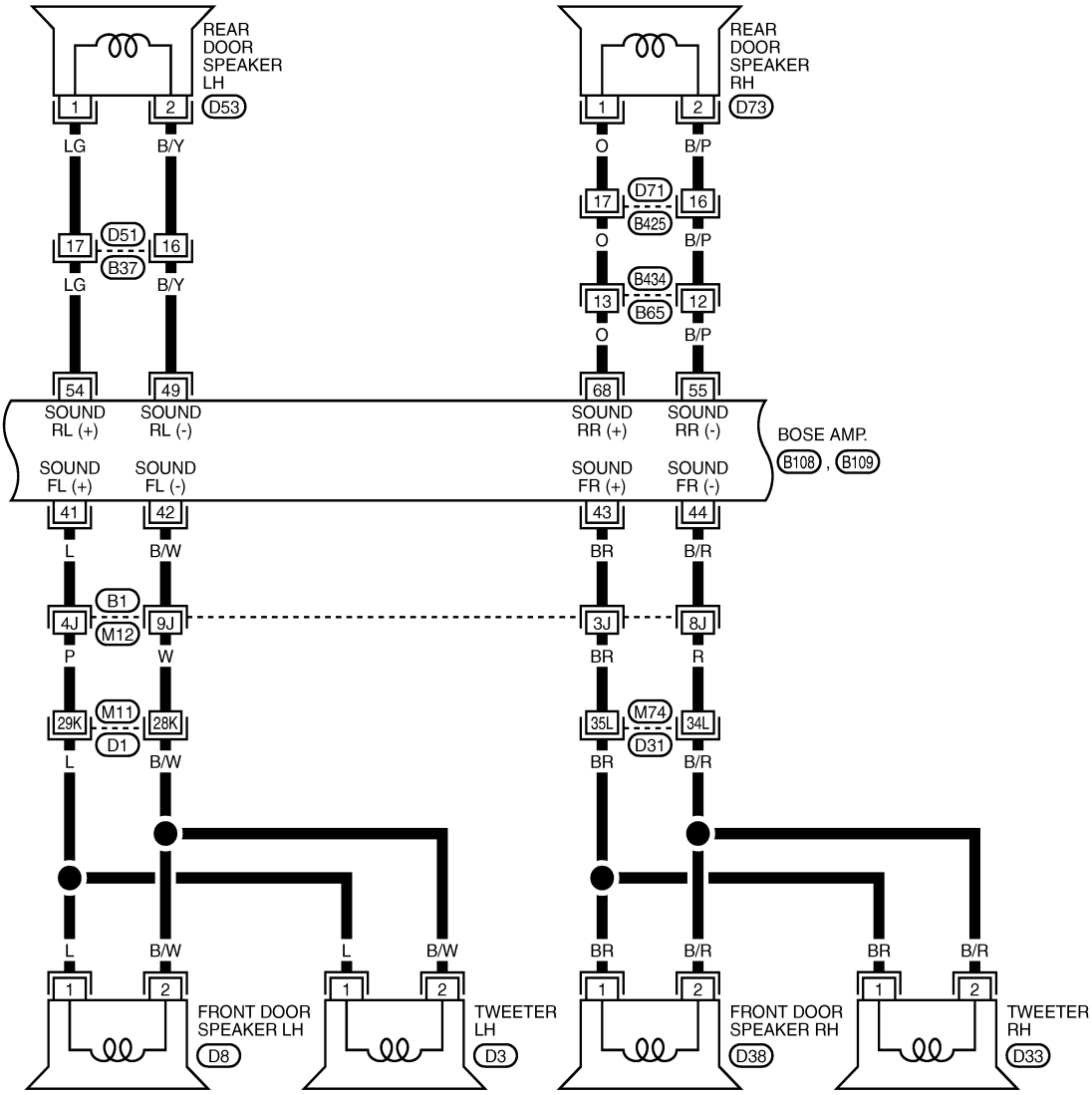
AV-AV-83

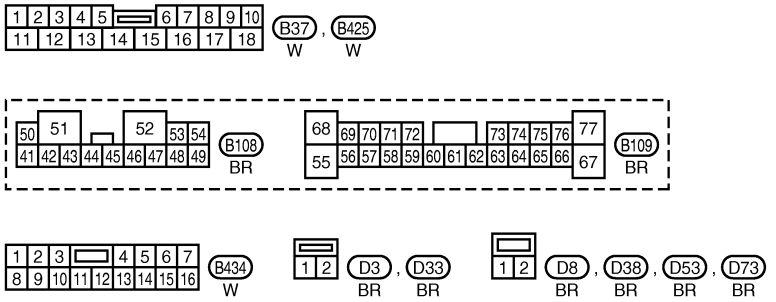




TKWT6766E

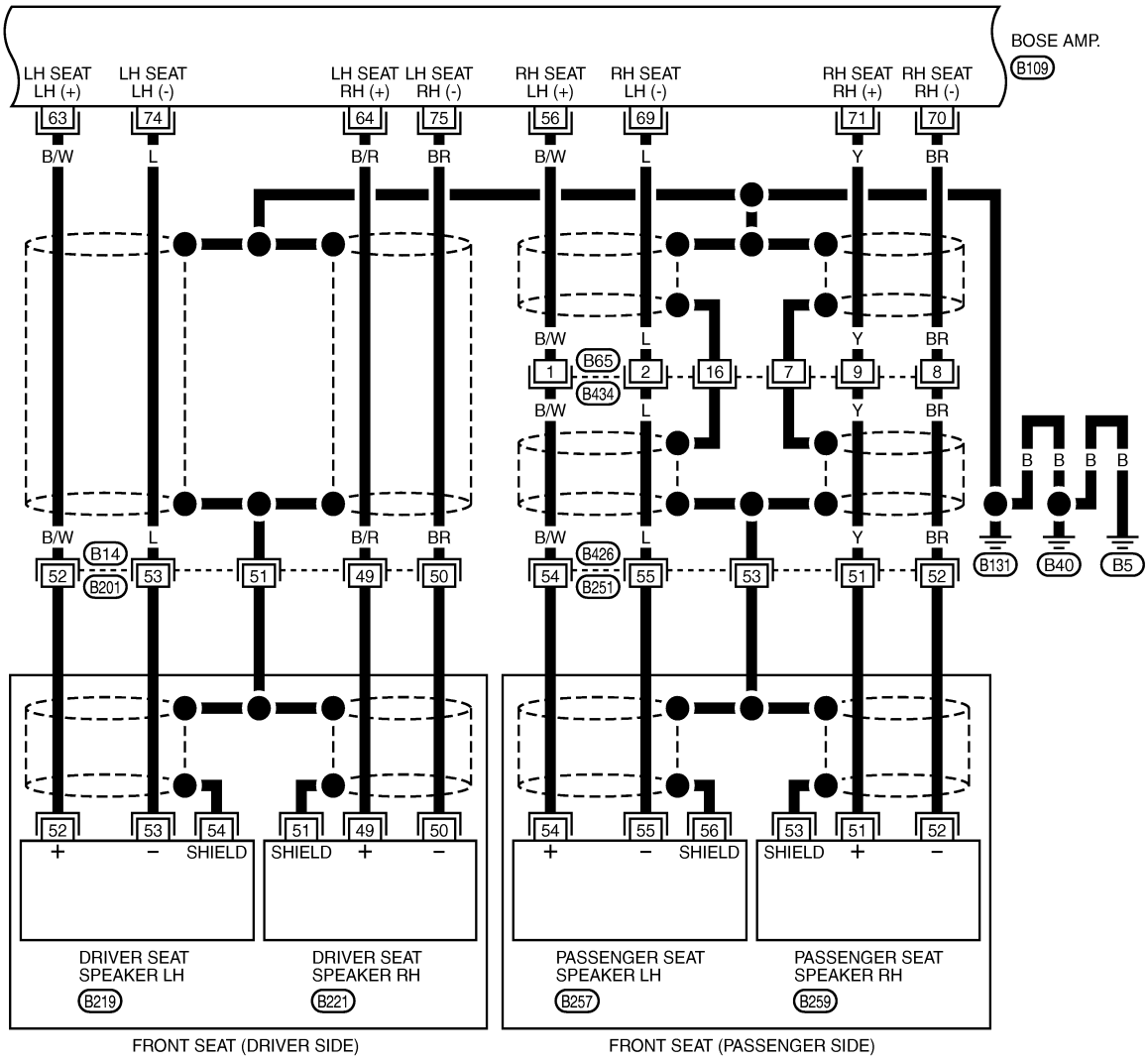
AV-AV-84

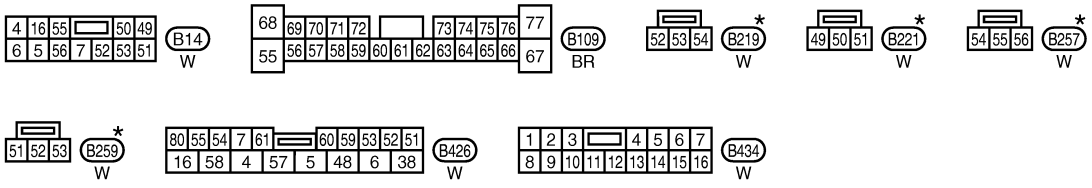




REFER TO THE FOLLOWING.
B1 , D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6767E

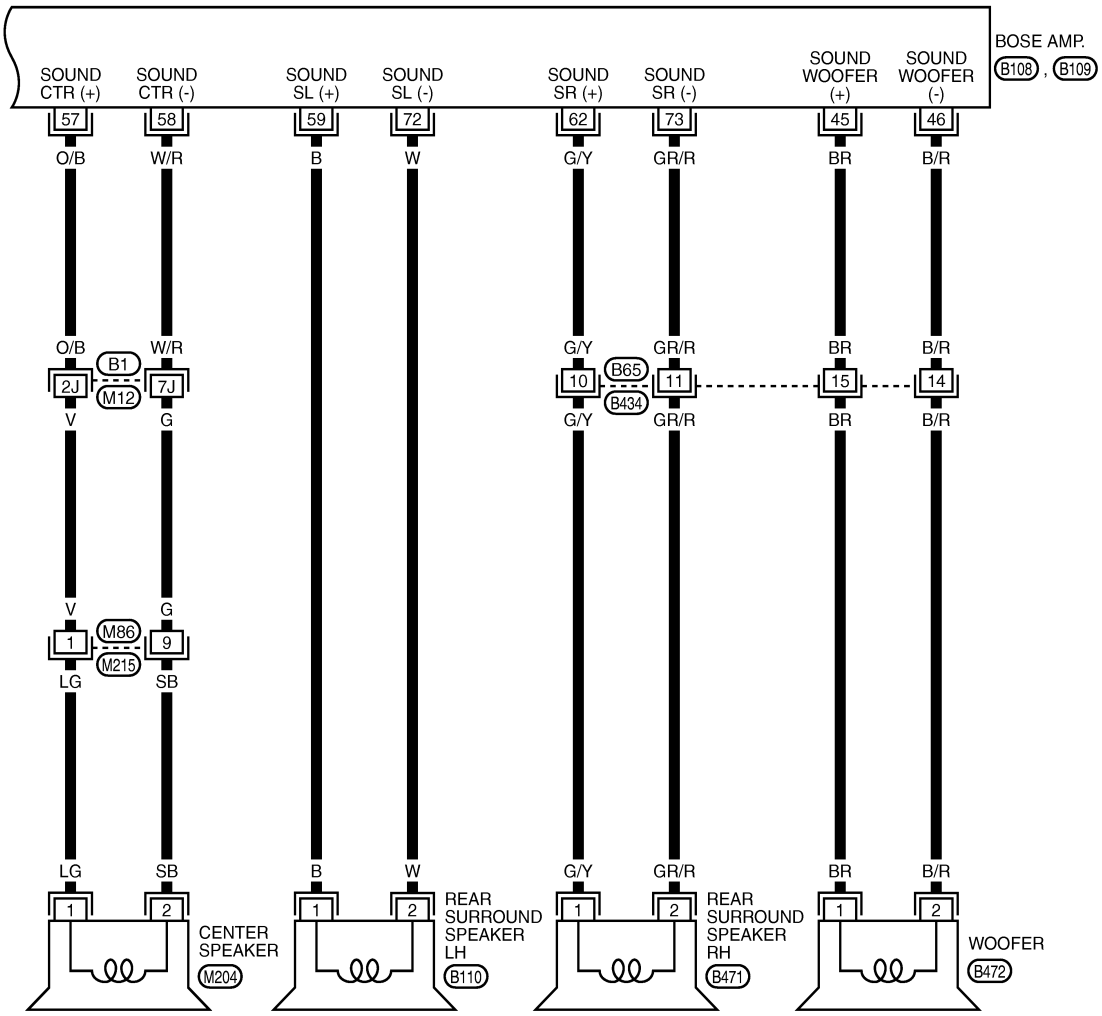


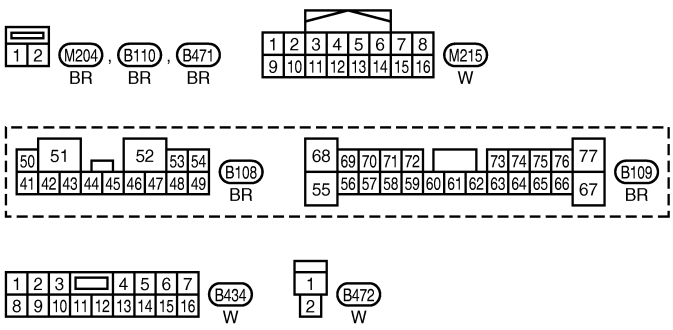


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6768E

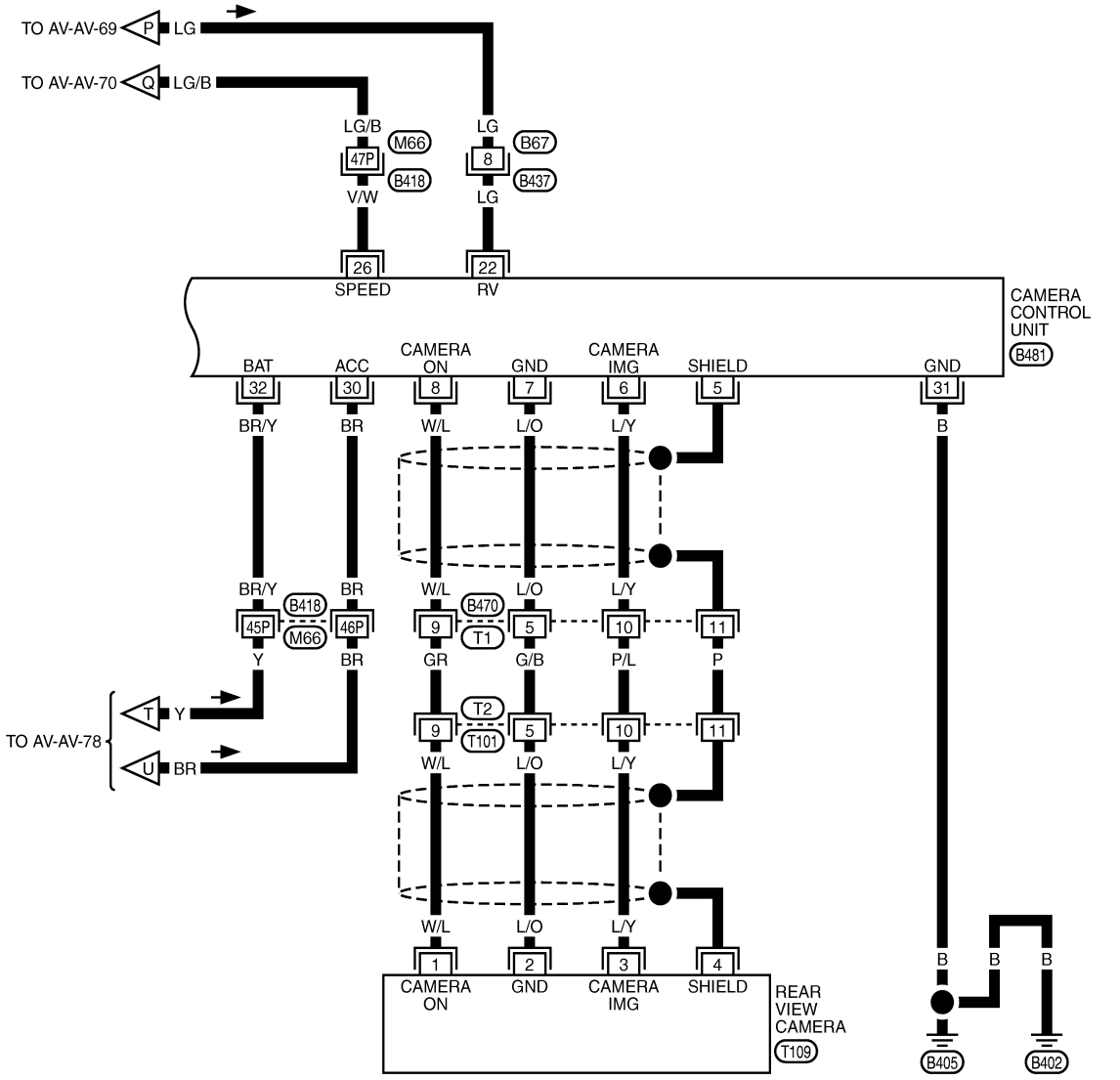
AV-AV-86

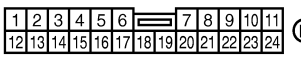


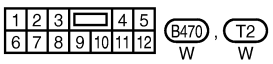


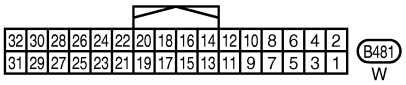
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

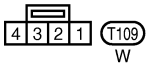
TKWT6769E











REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6770E

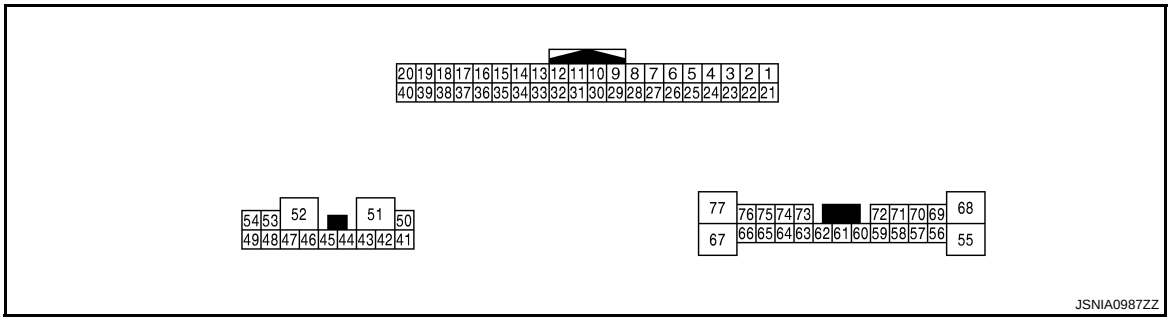
BOSE AMP.

BOSE AUDIO 2CH SYSTEM

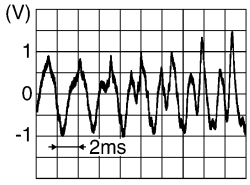
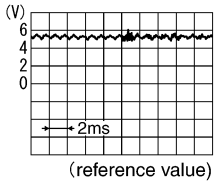
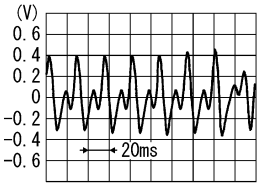
BOSE AUDIO 2CH SYSTEM : Reference Value

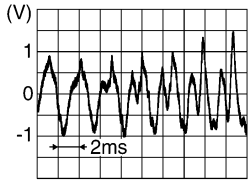
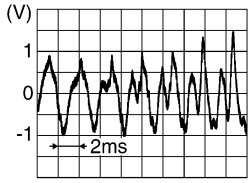
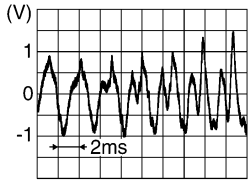
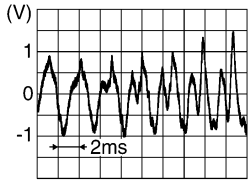
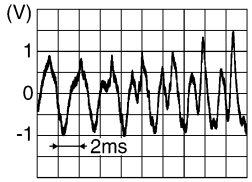
INFOID:0000000004156090

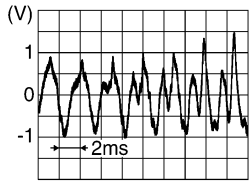
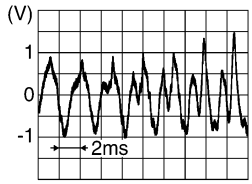
TERMINAL LAYOUT



PHYSICAL VALUES

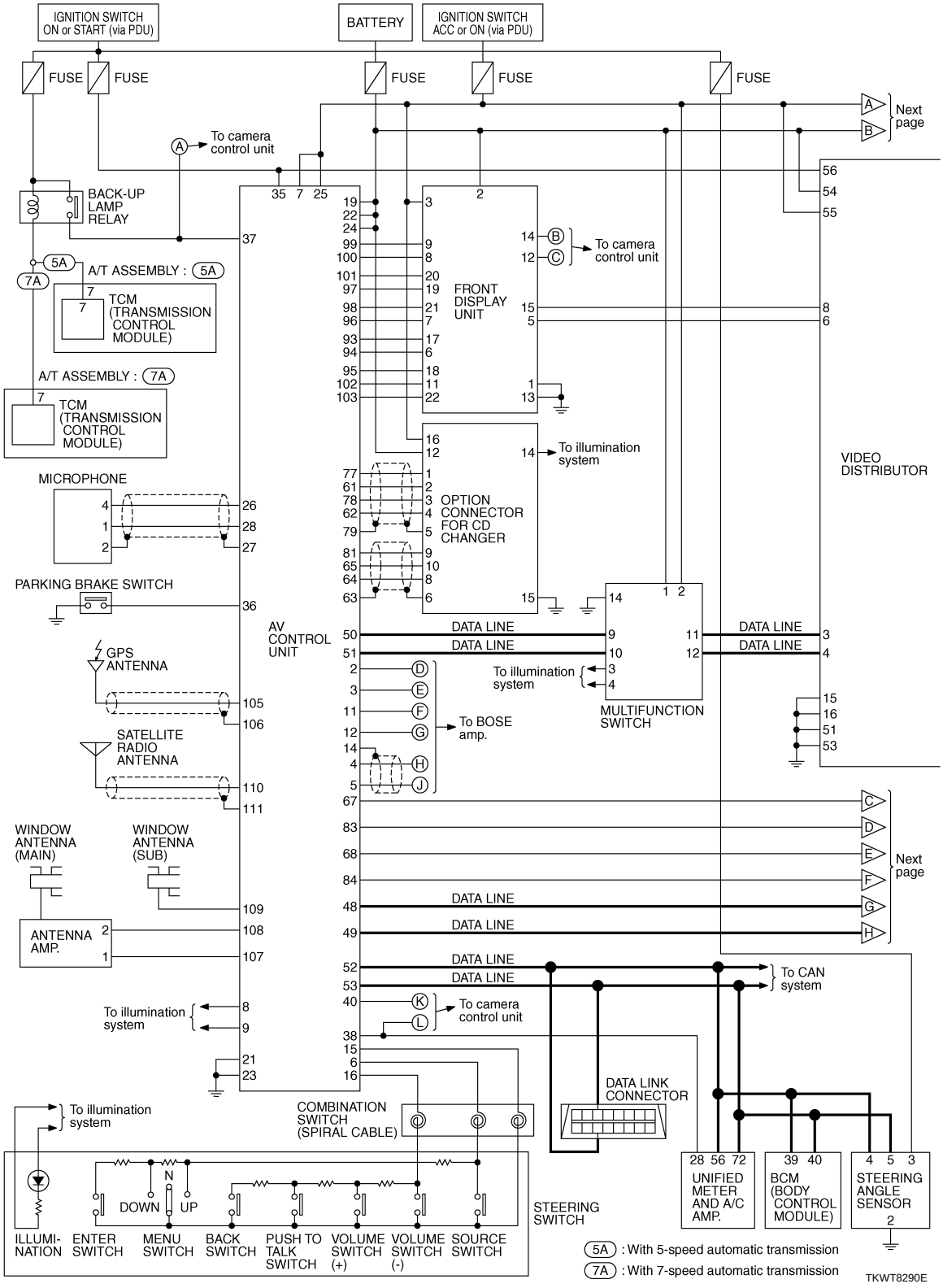
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
16 (B/W)	15 (L)	Voice guidance signal	Input	Ignition switch ON	When inputting voice guidance.	 SKIB3609E
25 (L)	26 (B/W)	MIC. signal (for AudioPilot®)	Input	Ignition switch ON	When inputting noise.	 PKIA2104E
27	—	Shield	—	—	—	—
35 (G)	—	AV communication signal (L)	Input/ Output	—	—	—
36 (G)	—	AV communication signal (L)	Input/ Output	—	—	—
37 (R)	—	AV communication signal (H)	Input/ Output	—	—	—
38 (R)	—	AV communication signal (H)	Input/ Output	—	—	—
45 (BR)	46 (B/R)	Sound signal woofer	Output	Ignition switch ON	Sound output.	 PKIB6116J

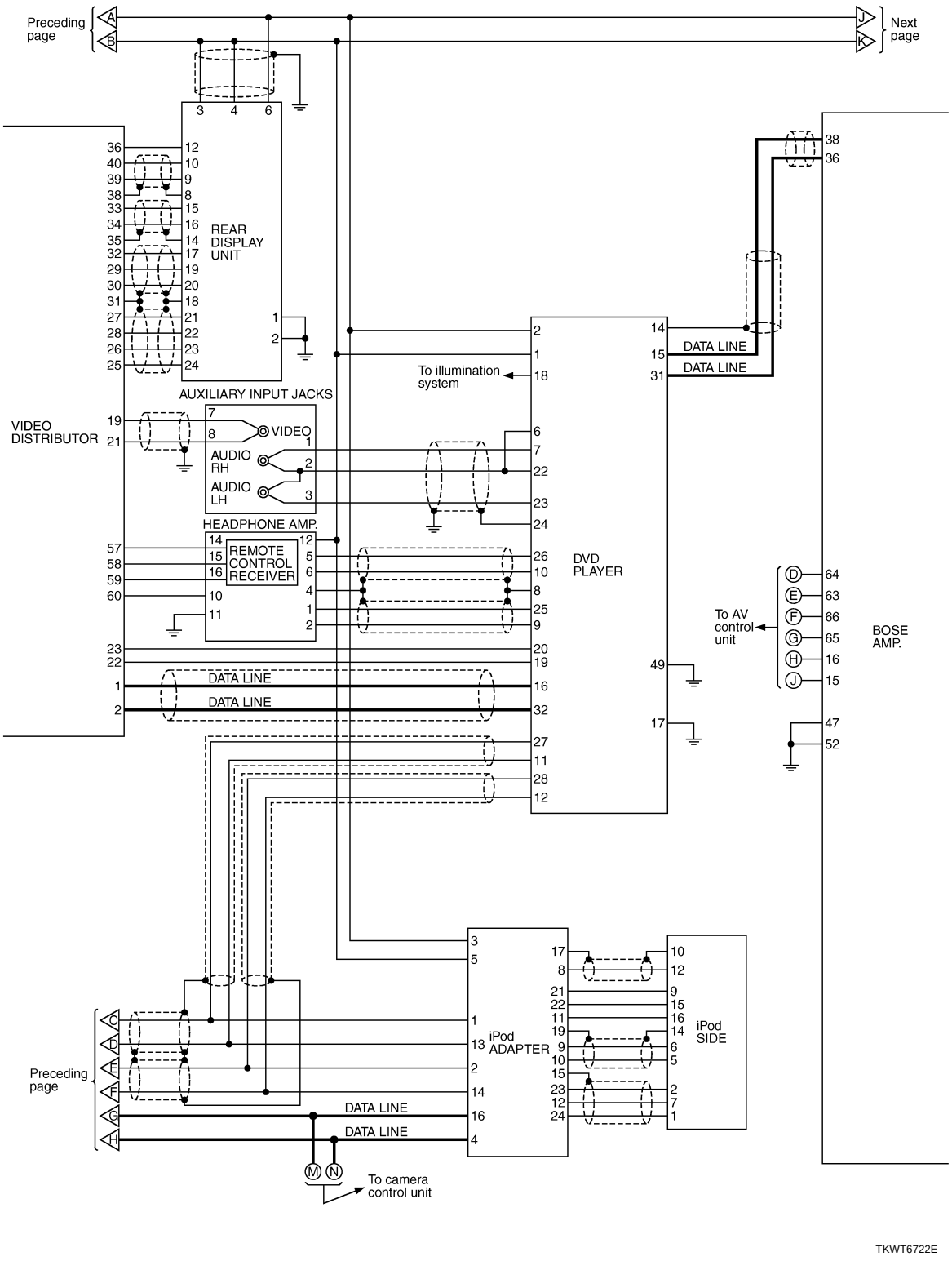
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
47 (B/W)	Ground	Ground	—	Ignition switch ON	—	0 V
50 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
51 (R)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
52 (B/W)	Ground	Ground	—	Ignition switch ON	—	0 V
54 (O)	49 (B/P)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
58 (P)	59 (L/Y)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
60 (BR)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
64 (P)	63 (W)	Sound signal LH	Input	Ignition switch ON	Audio sound output.	 SKIB3609E
66 (P)	65 (G)	Sound signal RH	Input	Ignition switch ON	Audio sound output.	 SKIB3609E
68 (LG)	55 (B/Y)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output.	 SKIB3609E

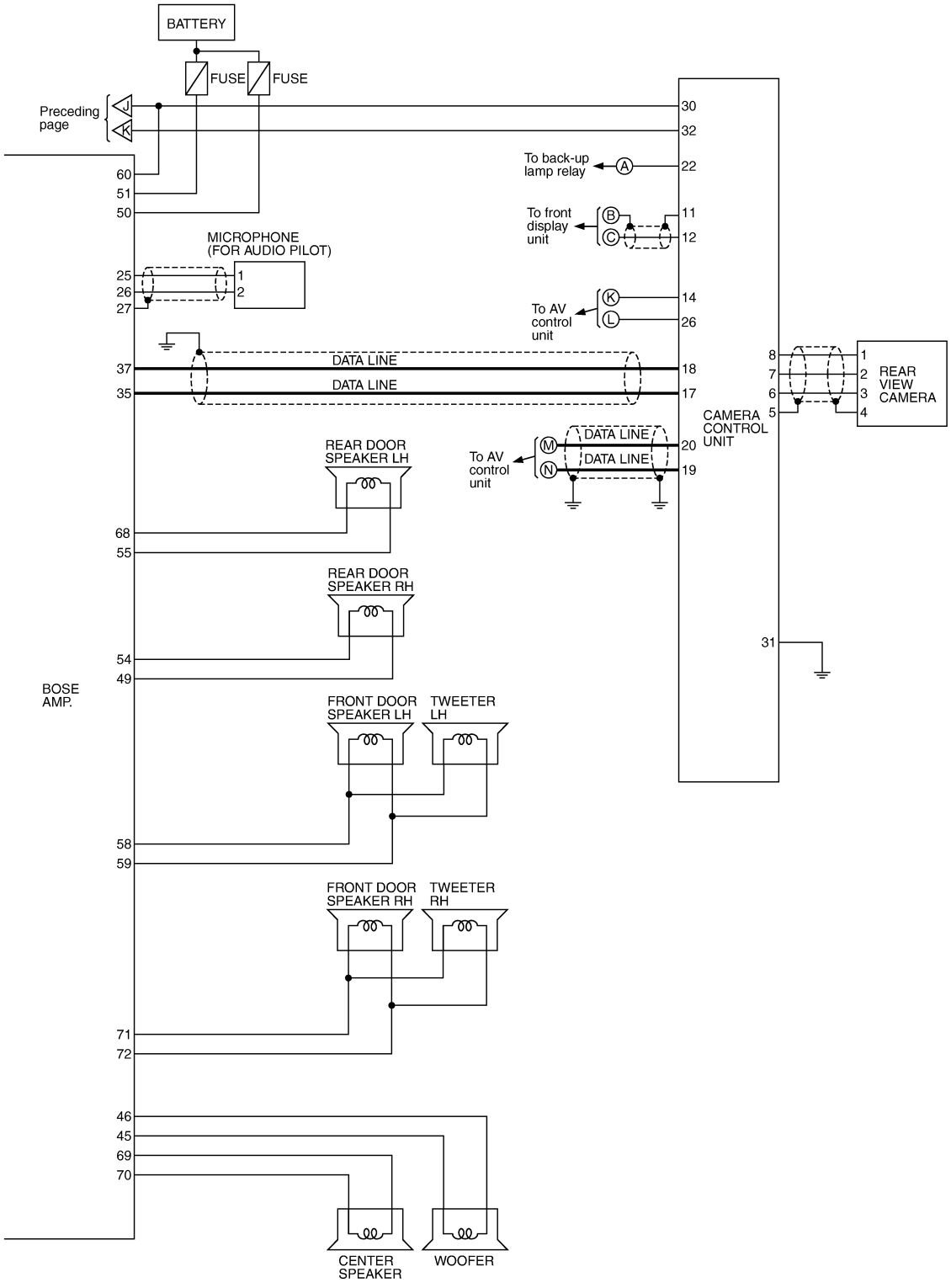
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
69 (V)	70 (G/Y)	Sound signal center speaker	Output	Ignition switch ON	Sound output.	 SKIB3609E
71 (BR)	72 (R)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output.	 SKIB3609E

BOSE AUDIO 2CH SYSTEM : Schematic - BOSE Audio 2ch System-

INFOID:0000000004391606




Preceding page
Next page
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
To illumination system
DVD PLAYER
DATA LINE
DATA LINE
DATA LINE
DATA LINE
To AV control unit
BOSE AMP.
iPod ADAPTER
iPod SIDE
Preceding page
DATA LINE
DATA LINE
To camera control unit
TKWT6722E



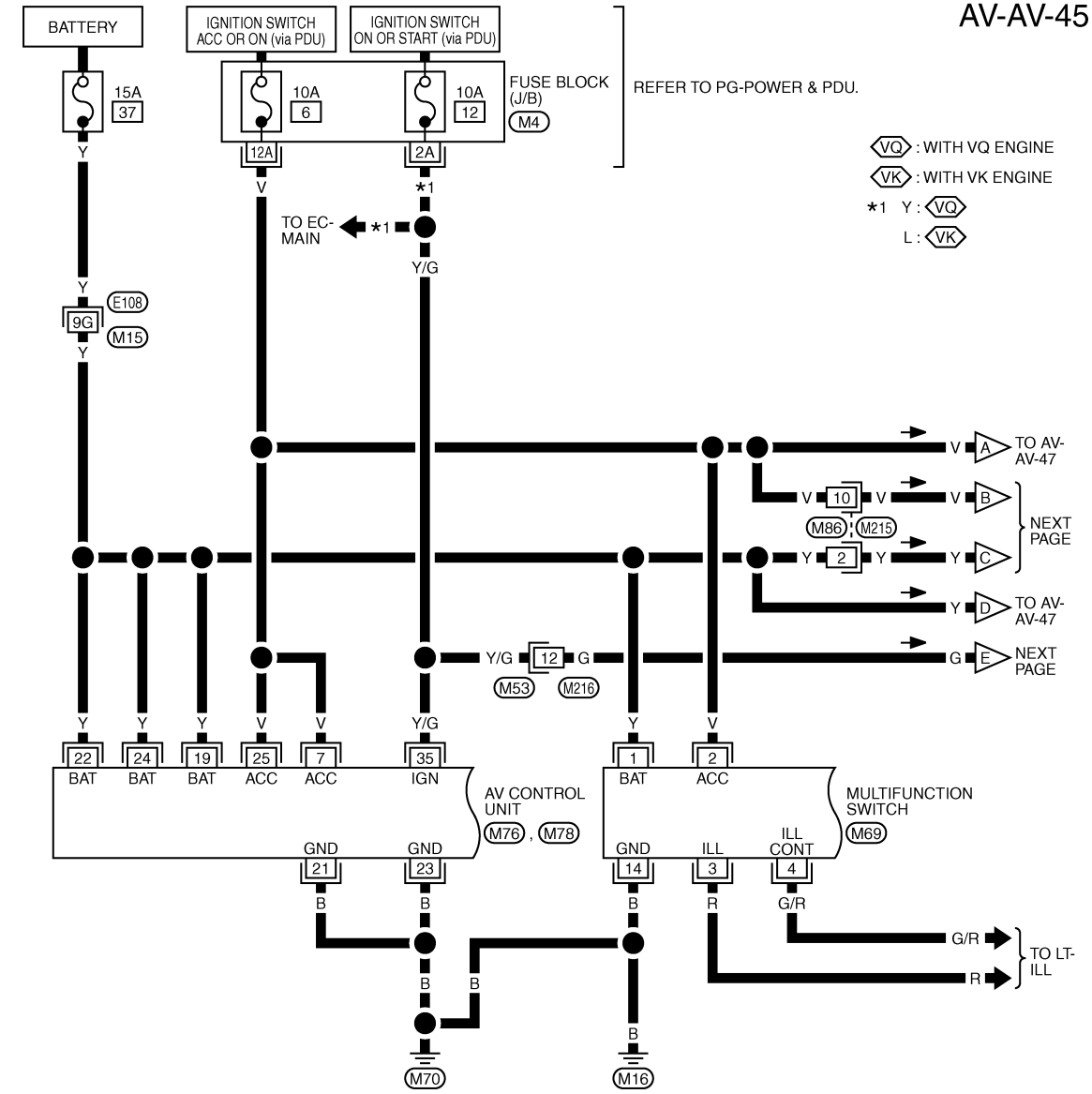
TKWT6723E

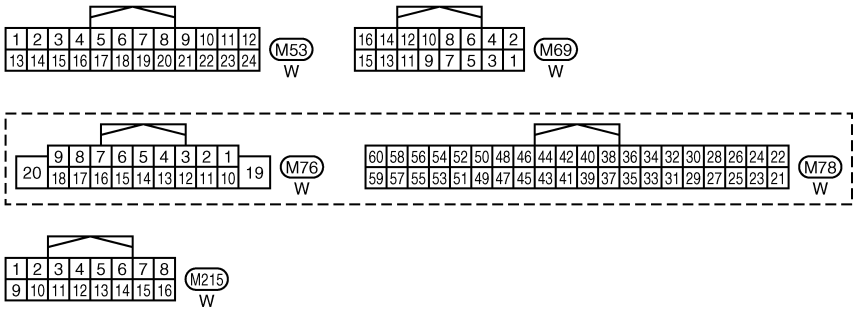
BOSE AUDIO 2CH SYSTEM : Wiring Diagram - AV - / BOSE Audio 2ch System

INFOID:0000000004391607

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

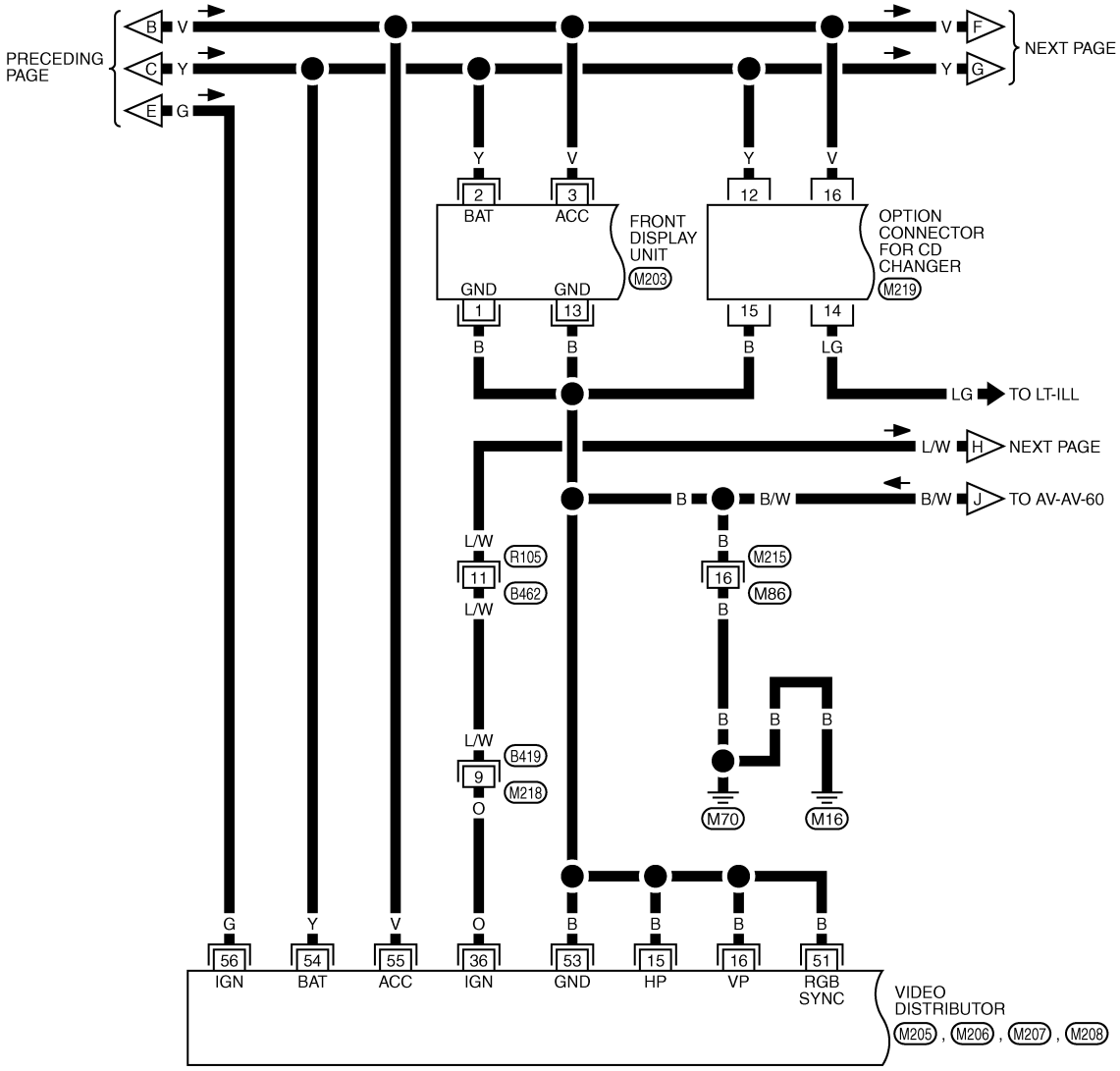


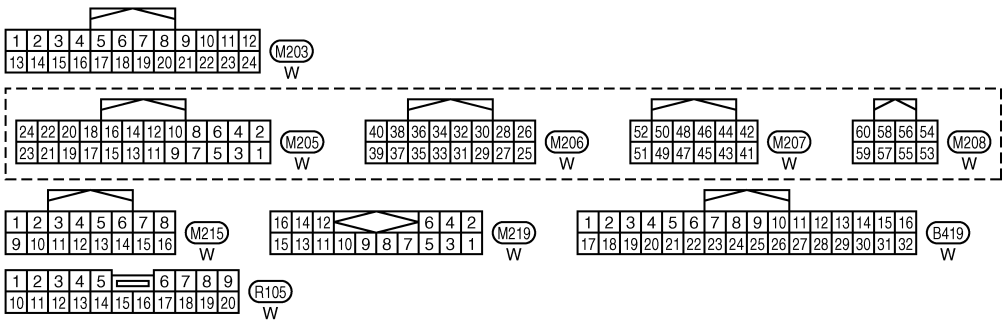


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8291E

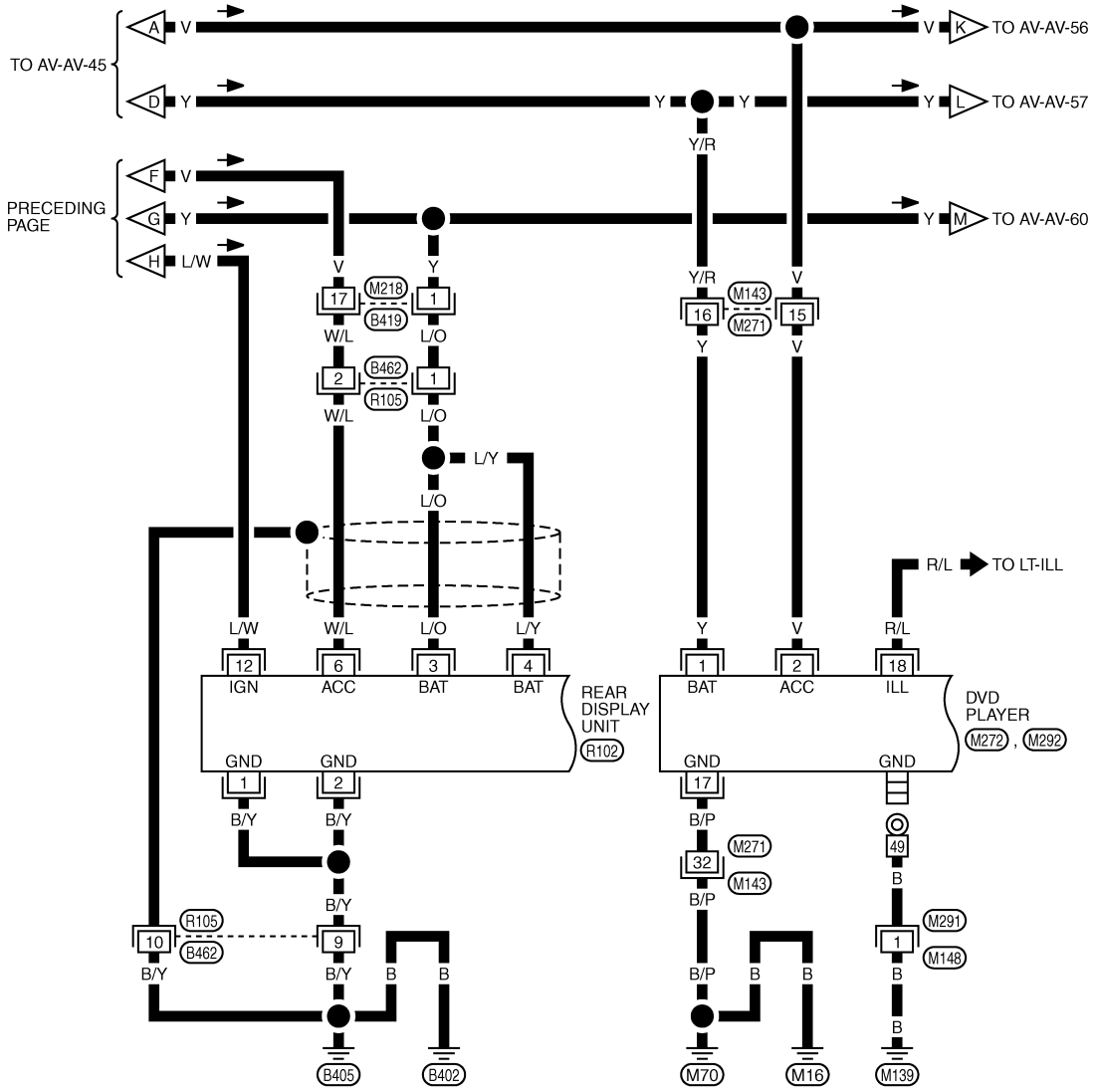
AV-AV-46

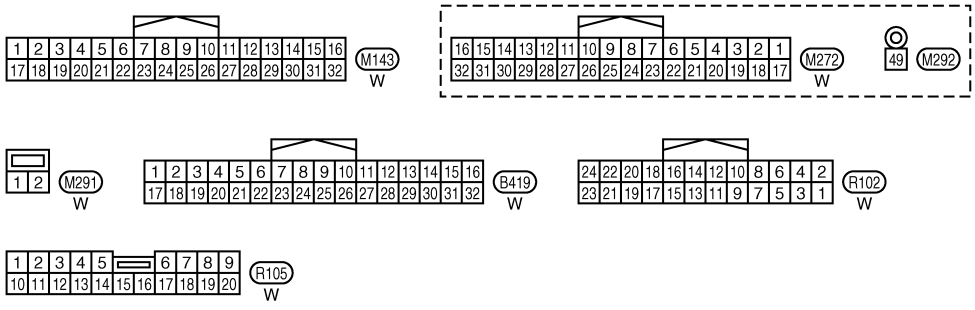




TKWT8292E

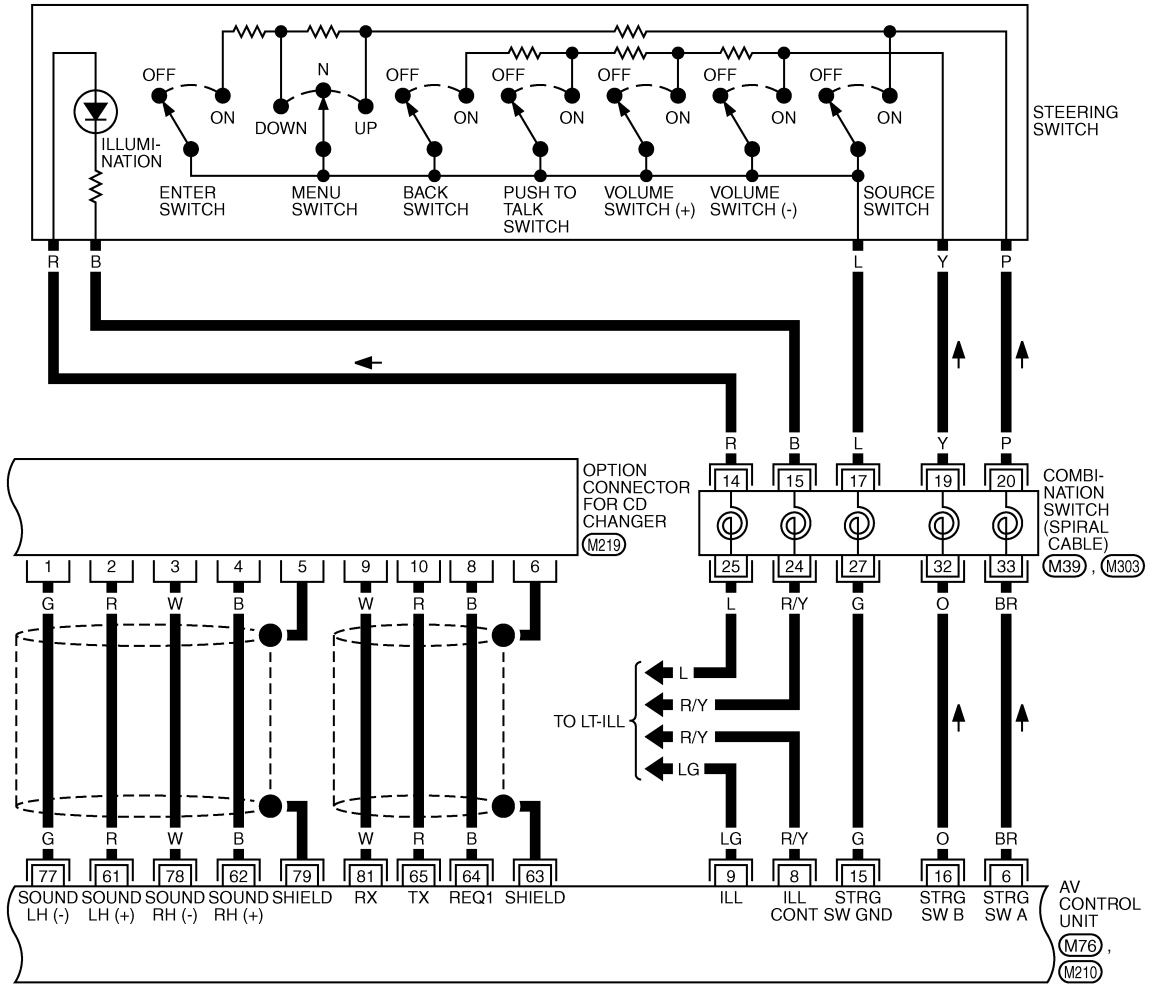
AV-AV-47

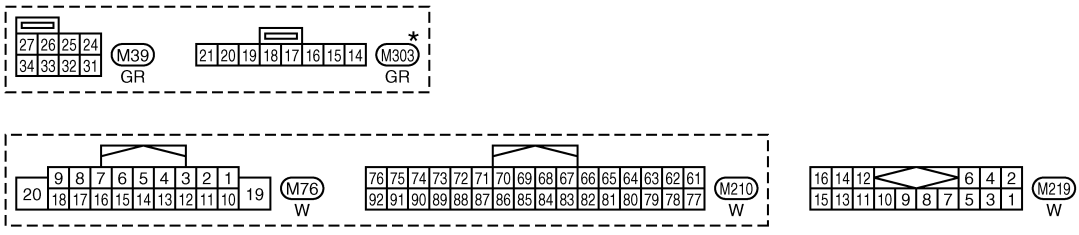




TKWT8293E

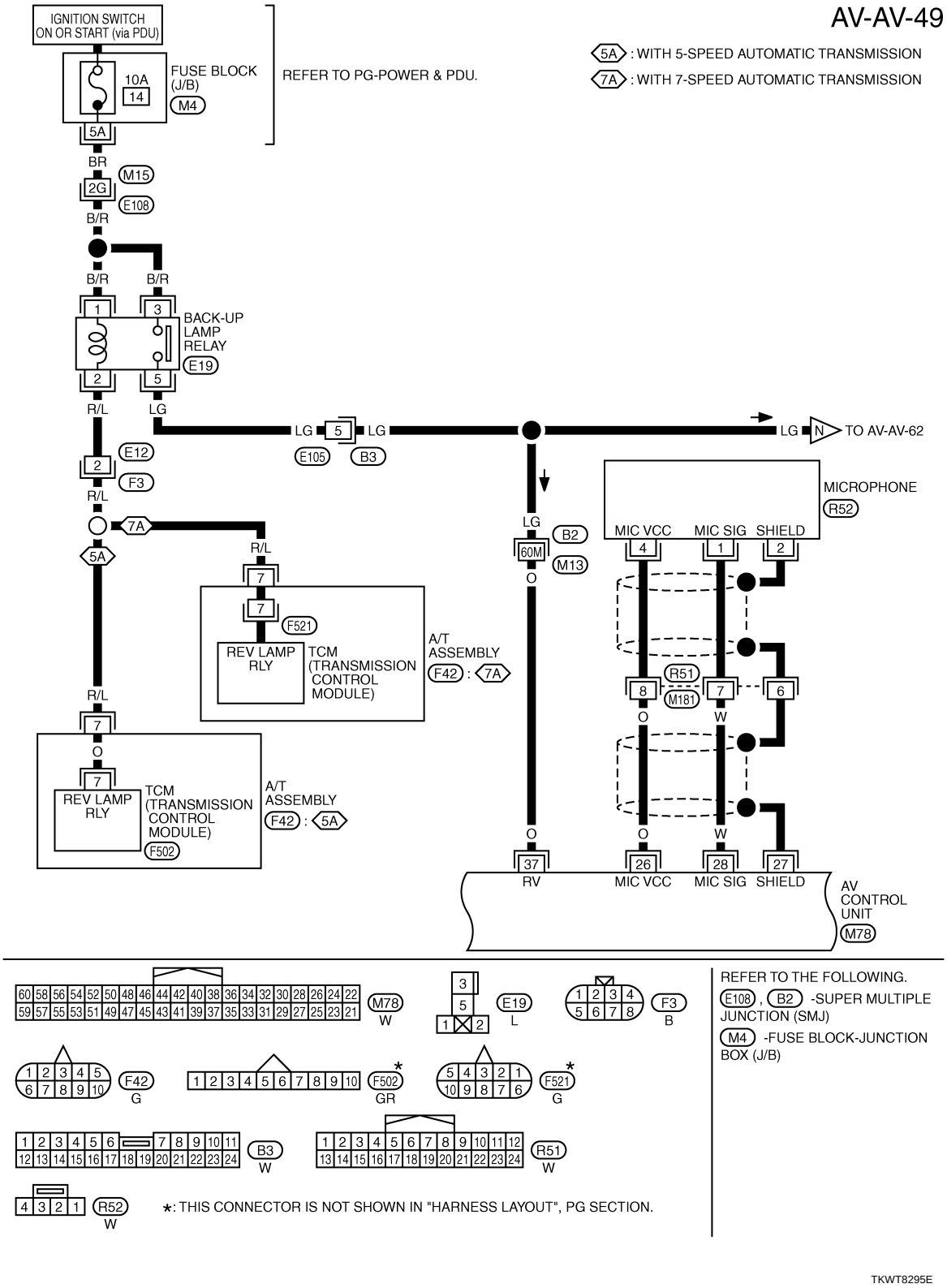
AV-AV-48



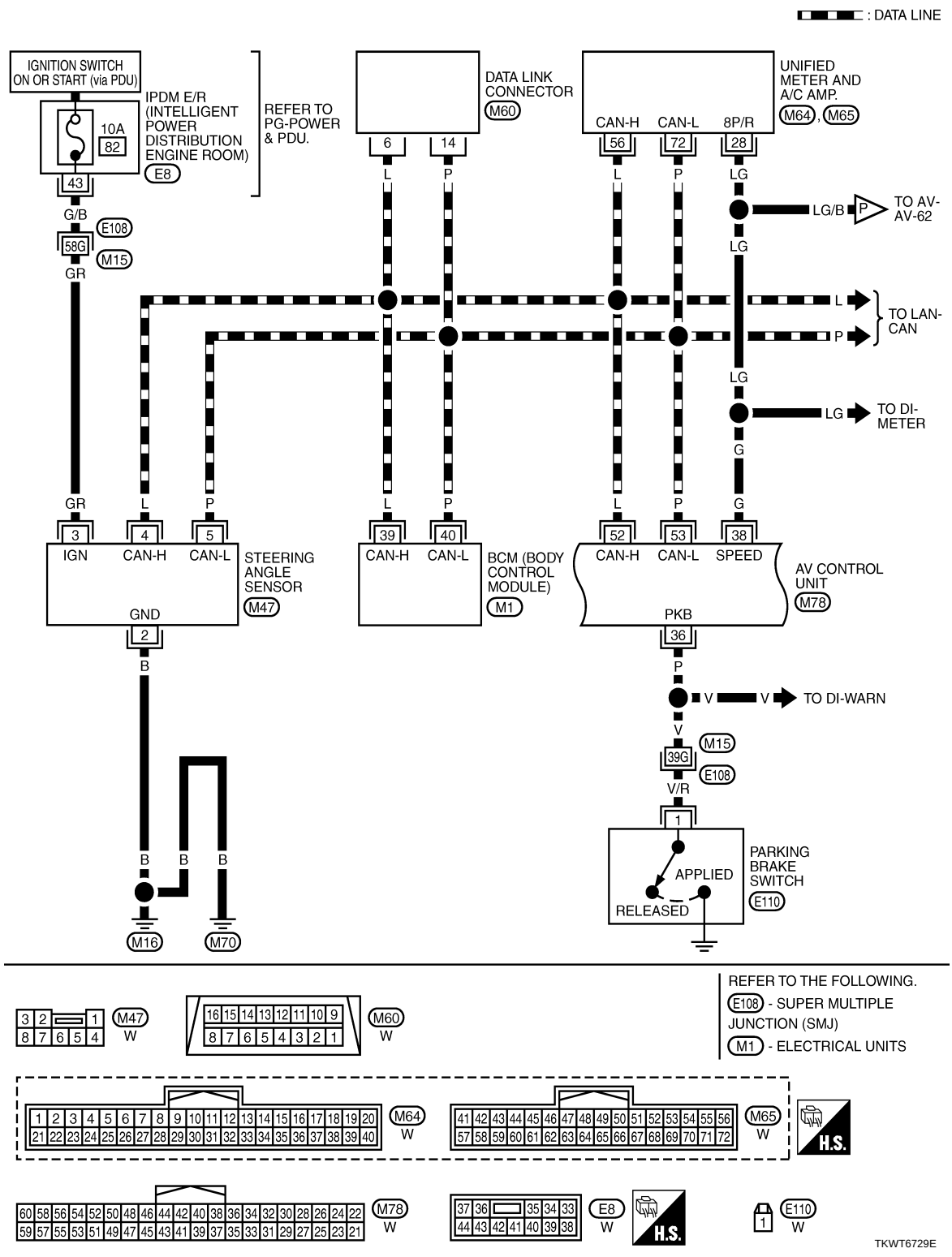


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

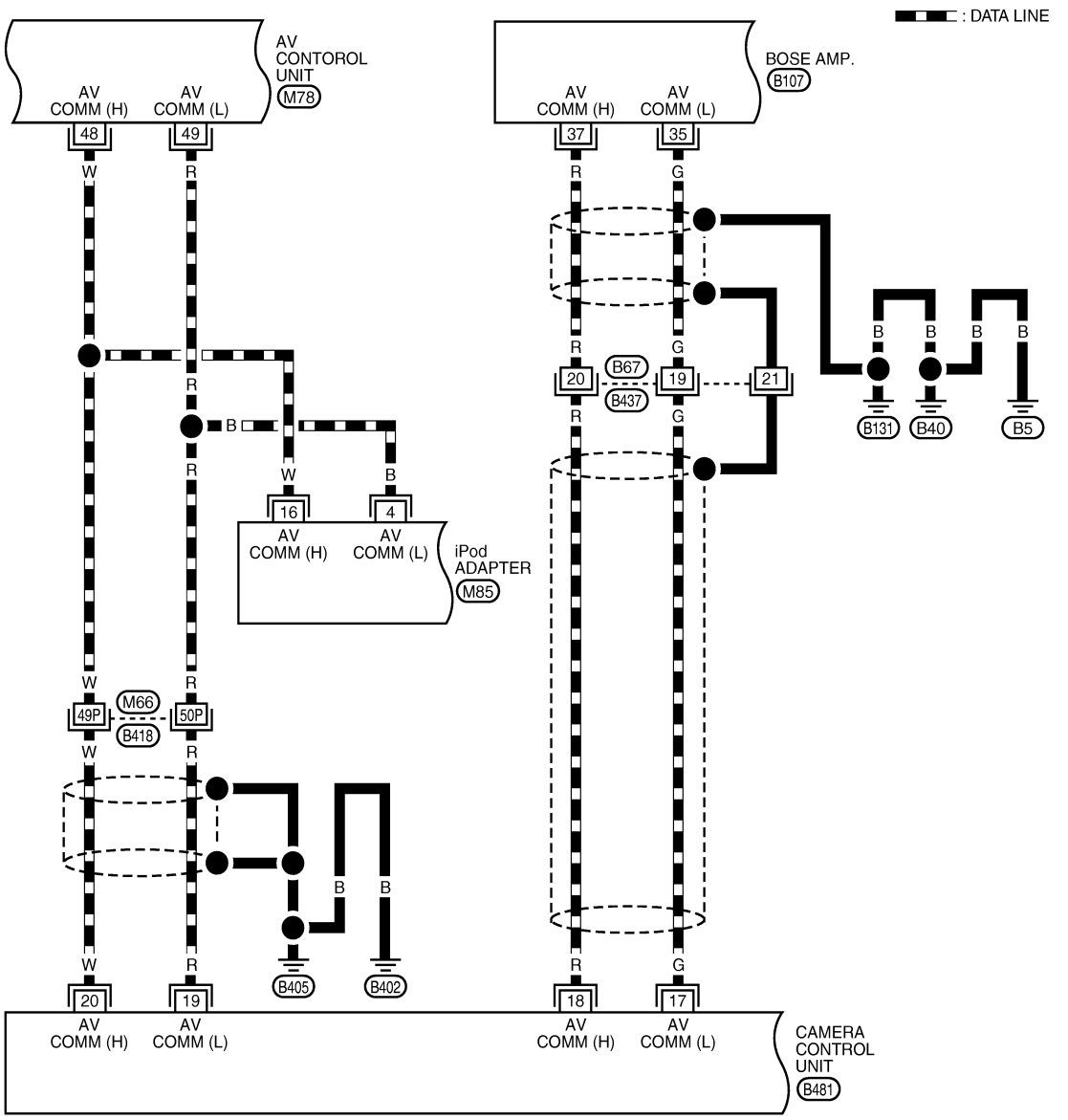
TKWT8294E

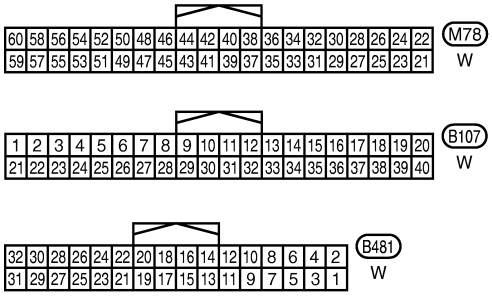

AV-AV-49
5A : WITH 5-SPEED AUTOMATIC TRANSMISSION
7A : WITH 7-SPEED AUTOMATIC TRANSMISSION
IGNITION SWITCH ON OR START (via PDU)
FUSE BLOCK (J/B)
10A
14
M4
5A
REFER TO PG-POWER & PDU.
BR
2G
M15
E108
B/R
BACK-UP LAMP RELAY
E19
R/L
LG
E12
F3
E105
B3
TO AV-AV-62
7A
5A
REV LAMP RLY
TCM (TRANSMISSION CONTROL MODULE)
F521
A/T ASSEMBLY
F42 : 7A
F502
F42 : 5A
B2
60M
M13
MICROPHONE
R52
MIC VCC
MIC SIG
SHIELD
R51
M181
RV
AV CONTROL UNIT
M78
M78 W
E19 L
F3 B
F42 G
F502 GR
F521 G
B3 W
R51 W
R52 W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)
TKWT8295E

AV-AV-50


: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
REFER TO PG-POWER & PDU.
G/B
E108
58G
M15
GR
DATA LINK CONNECTOR M60
6
14
L
P
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56
72
28
L
P
LG
LG/B P
TO AV-AV-62
LG
L
P
TO LAN-CAN
LG
LG
TO DI-METER
G
GR L P
3 4 5
IGN CAN-H CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
L P
39 40
CAN-H CAN-L
BCM (BODY CONTROL MODULE) M1
L P G
52 53 38
CAN-H CAN-L SPEED
AV CONTROL UNIT M78
PKB
36
P
V V TO DI-WARN
V
39G
M15
E108
V/R
1
PARKING BRAKE SWITCH E110
APPLIED
RELEASED
B B B
M16
M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47 W
M60 W
M64 W
M65 W
H.S.
M78 W
E8 W
E110 W
TKWT6729E

AV-AV-51

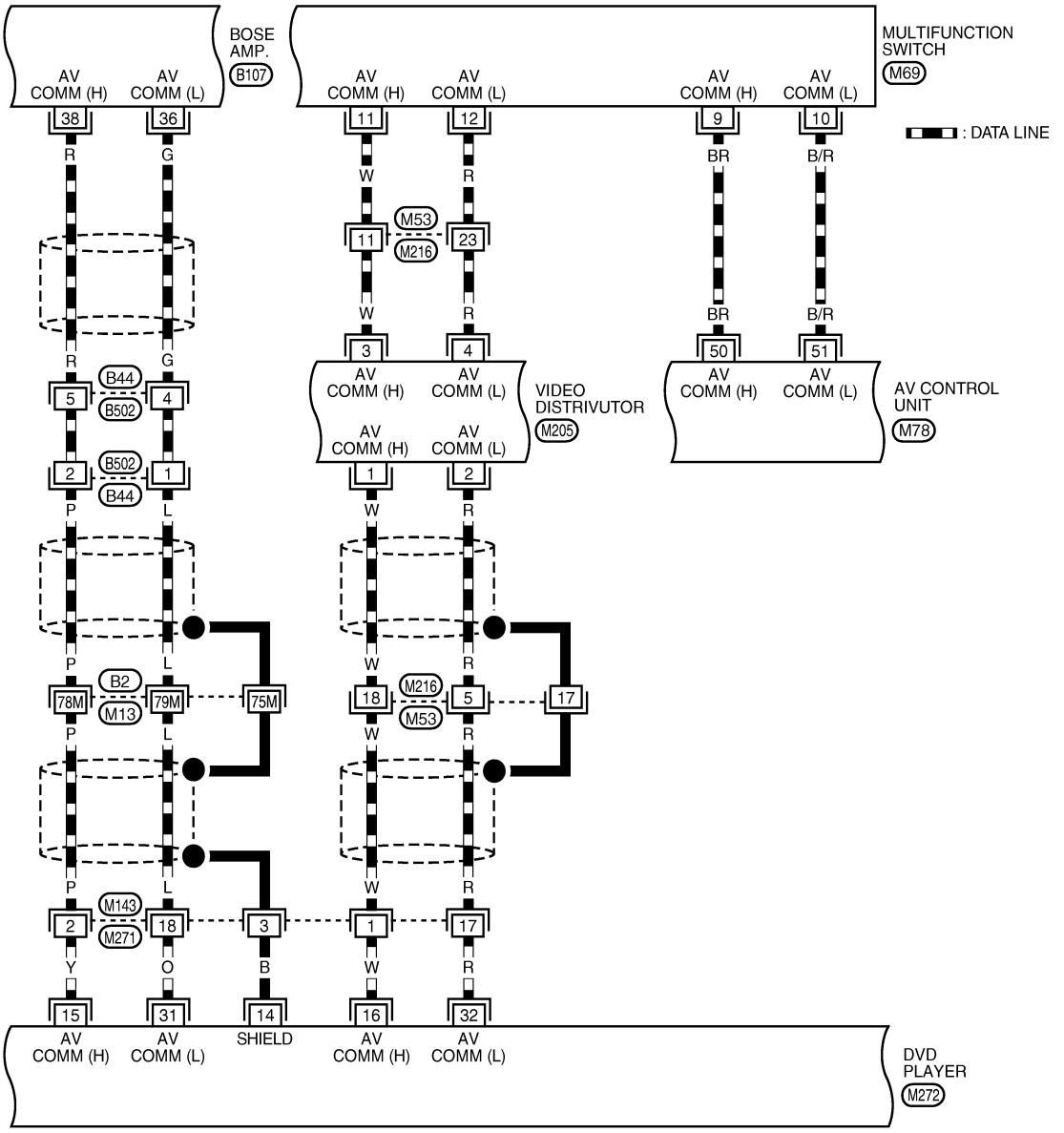


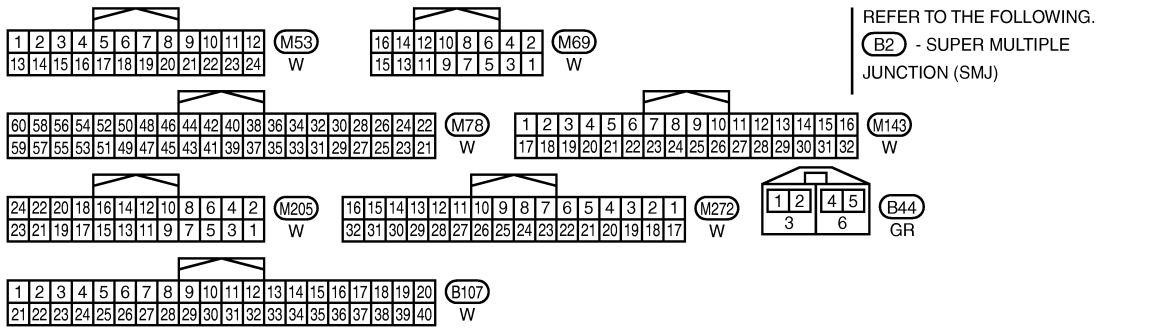


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6730E

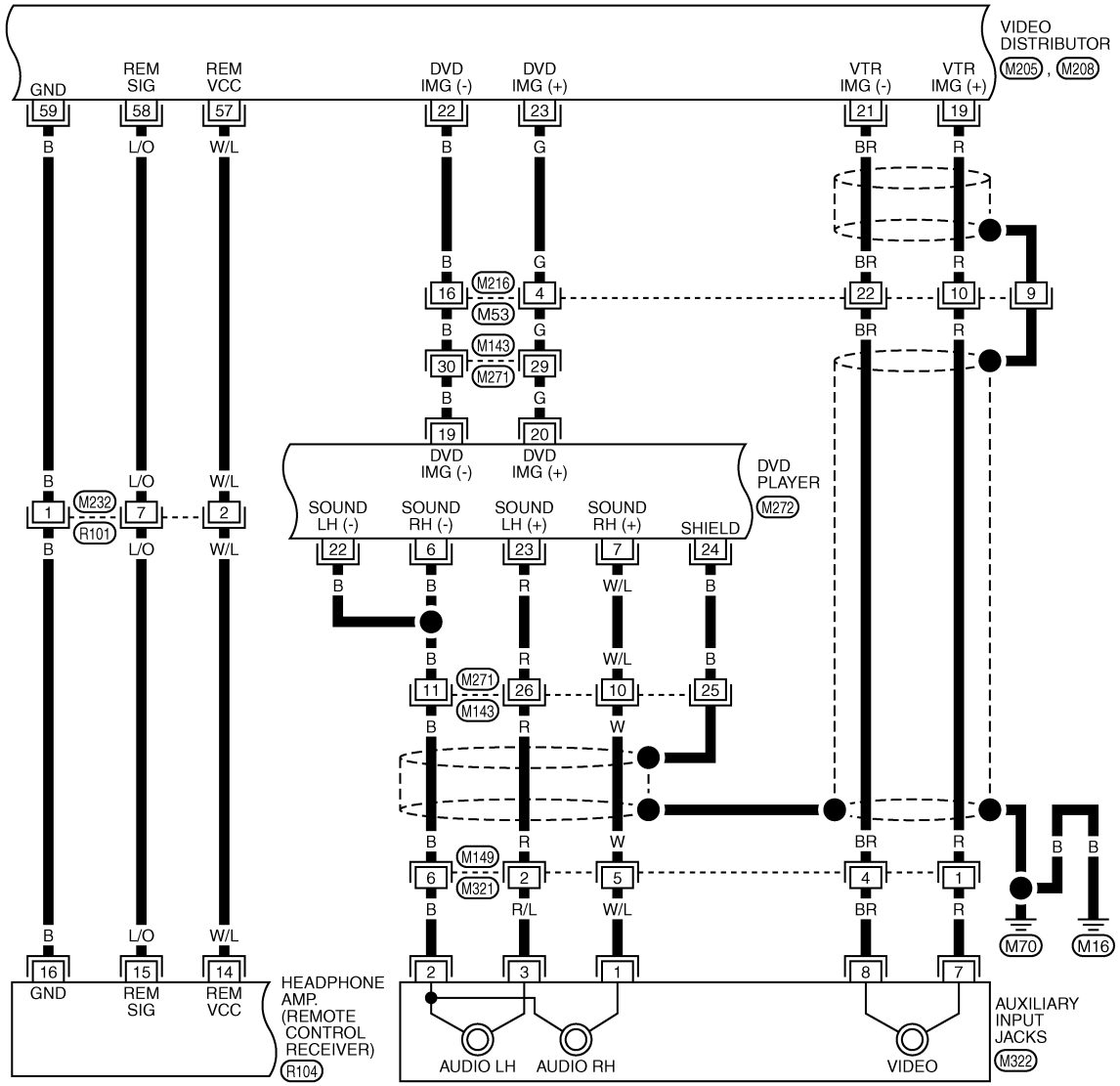
AV-AV-52

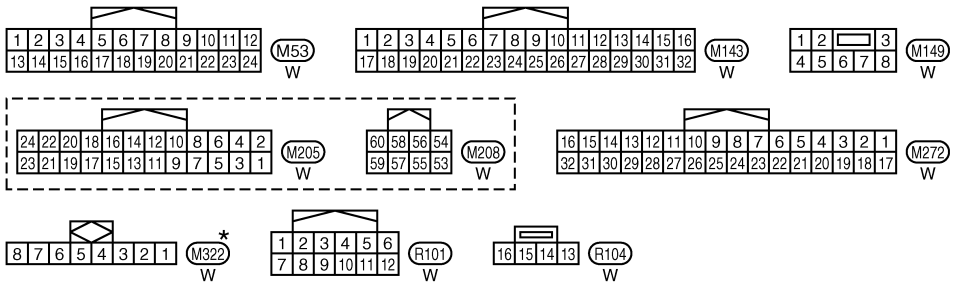




TKWT6731E

AV-AV-53

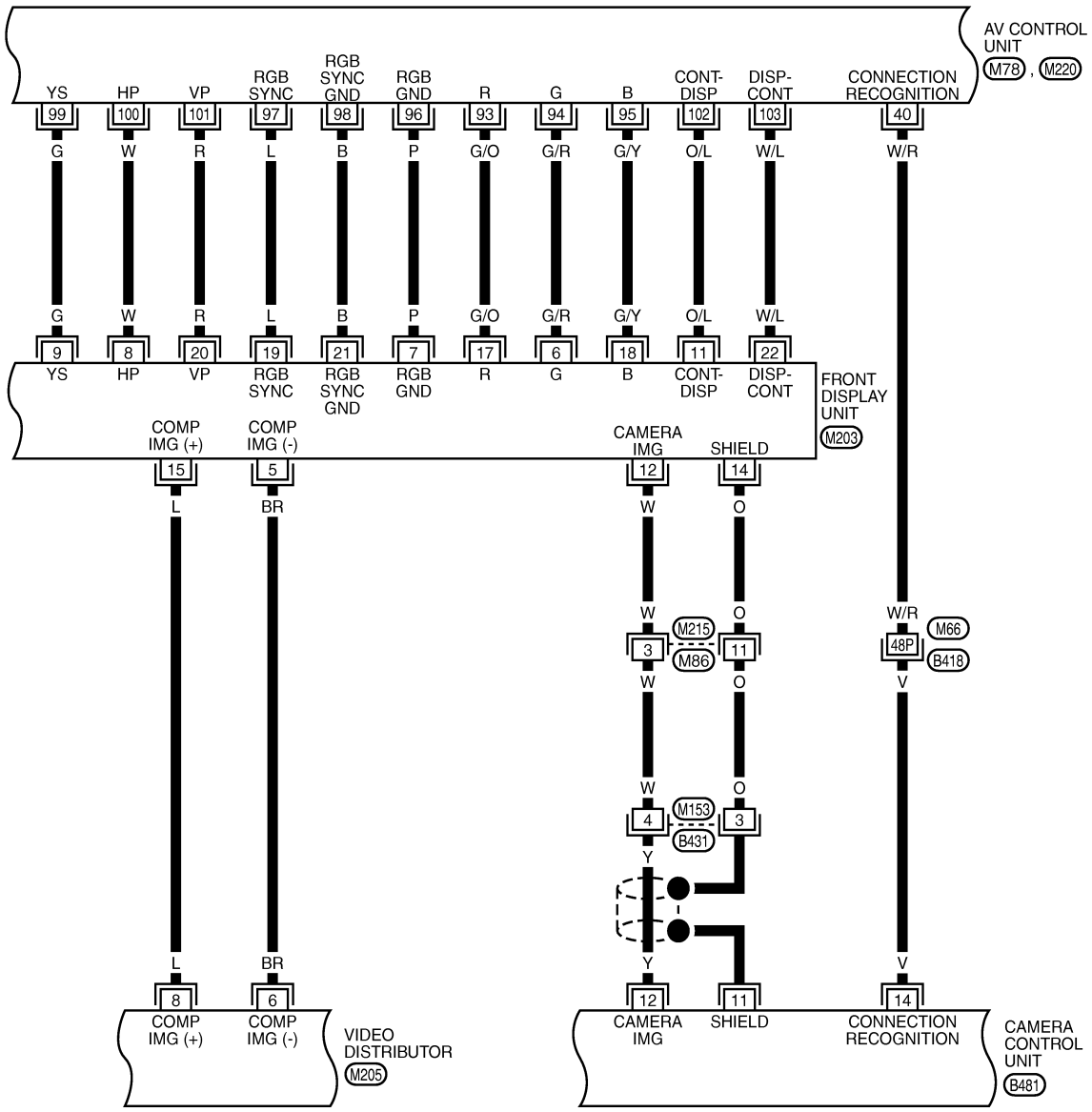


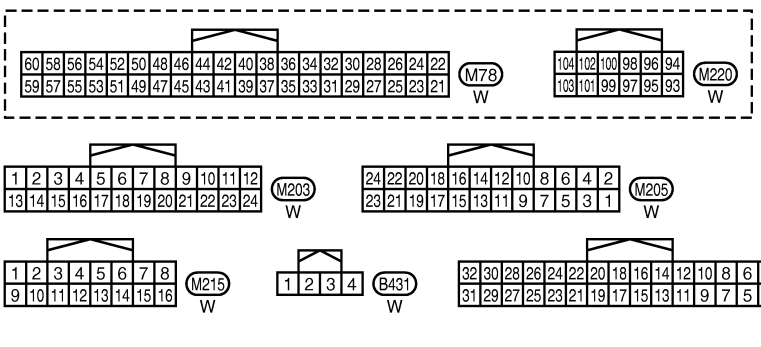


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8296E

AV-AV-54

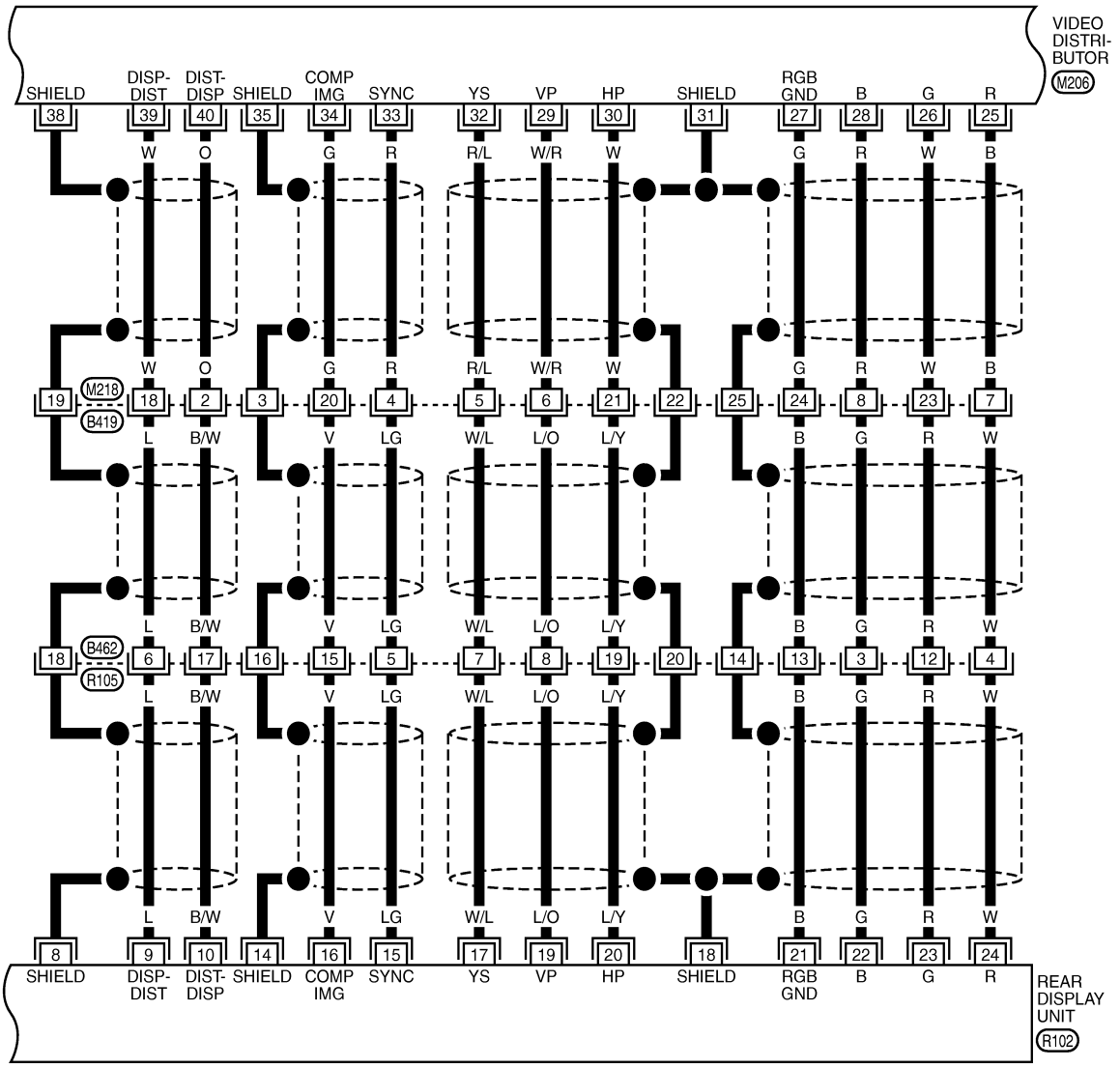


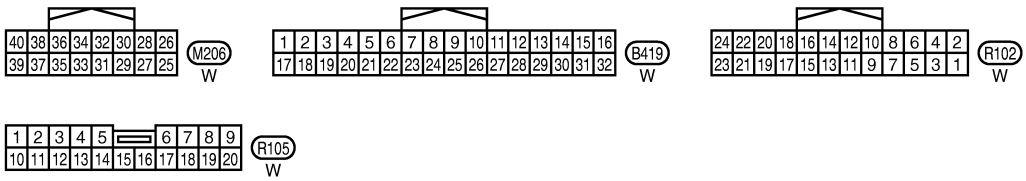


REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT6733E

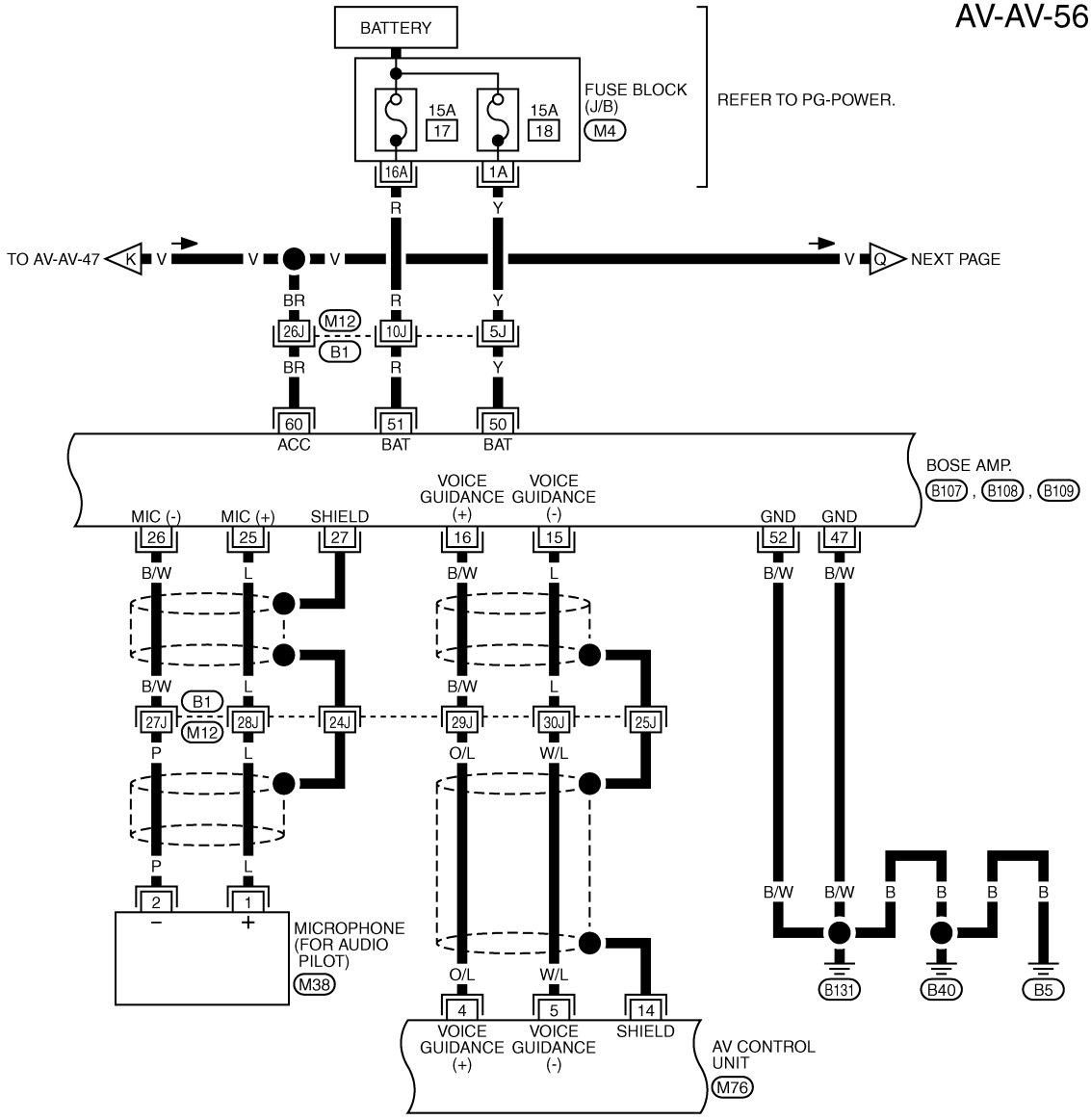
AV-AV-55

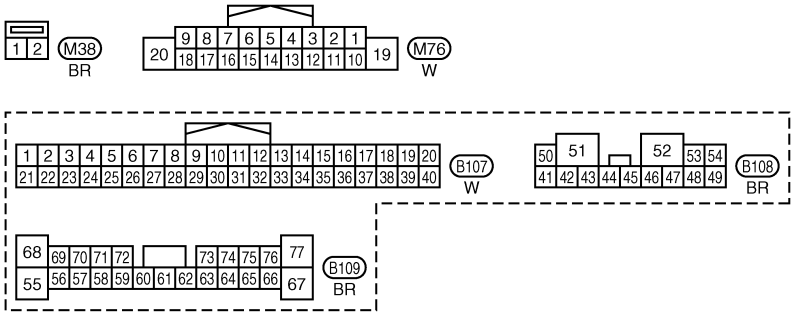




TKWT6734E

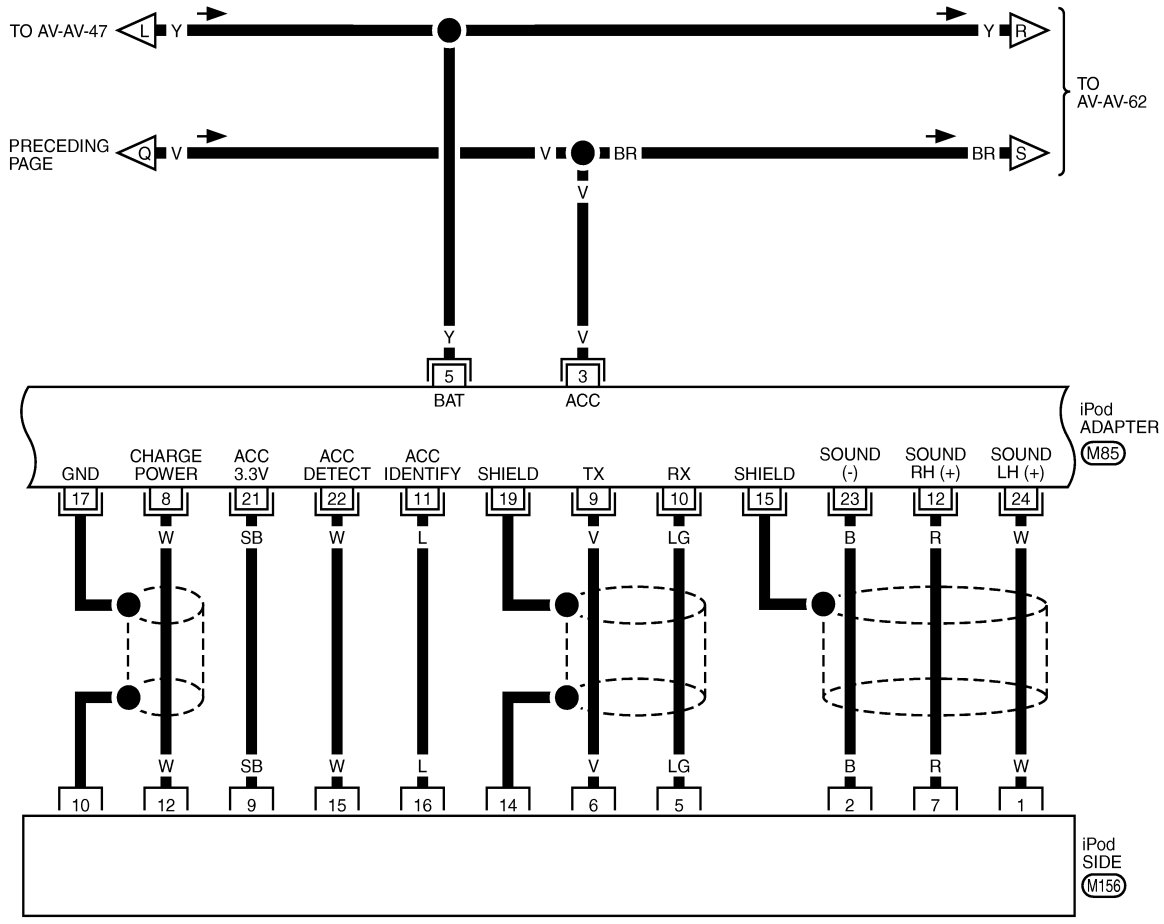
AV-AV-56

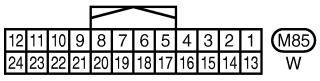


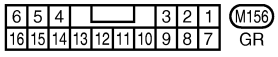


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8297E

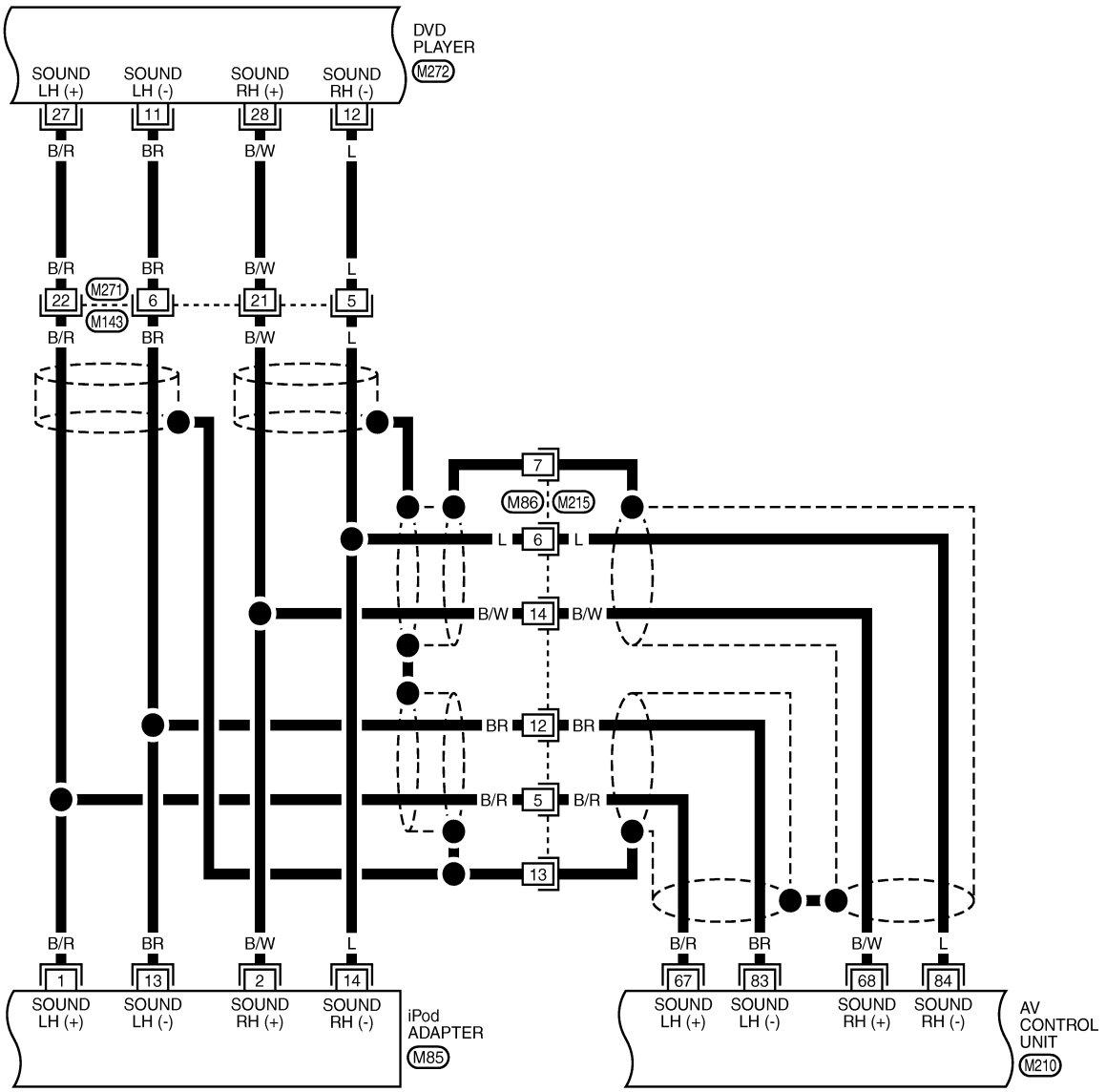

TO AV-AV-47
L
Y
Y
R
TO
AV-AV-62
PRECEDING
PAGE
Q
V
V
BR
BR
S
V
Y
V
5
BAT
3
ACC
iPod
ADAPTER
M85
GND
CHARGE
POWER
ACC
3.3V
ACC
DETECT
ACC
IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND
(-)
SOUND
RH (+)
SOUND
LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod
SIDE
M156

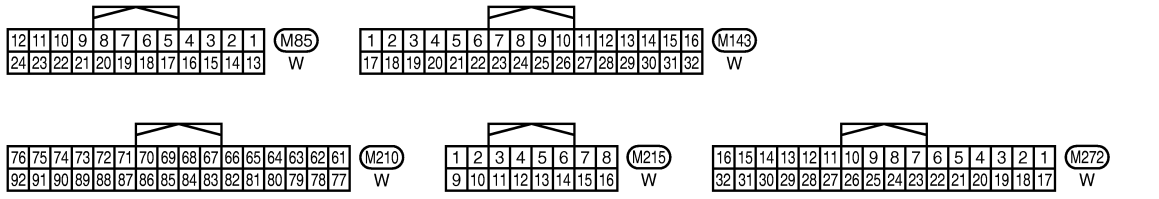

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6737E

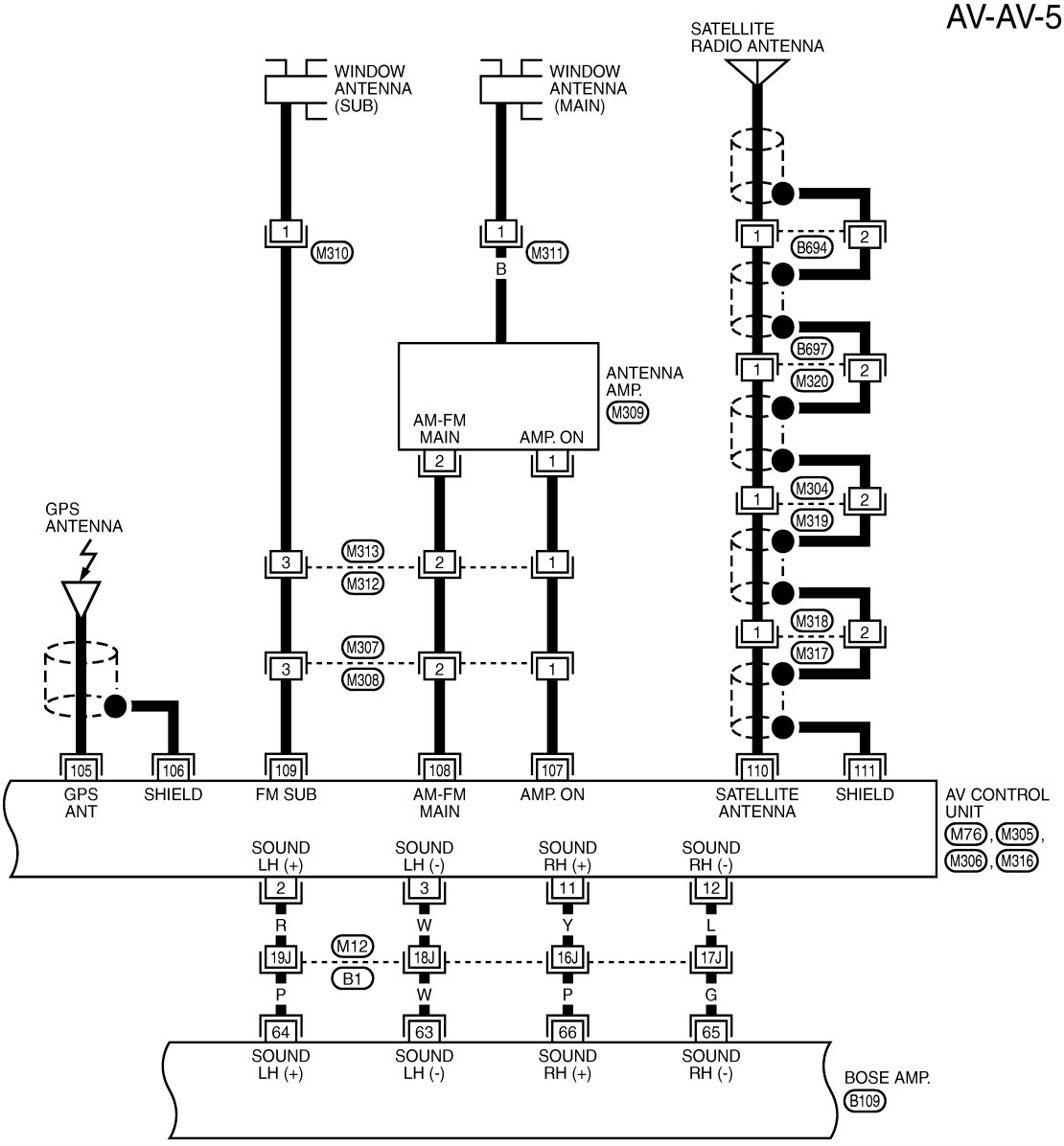
AV-AV-58

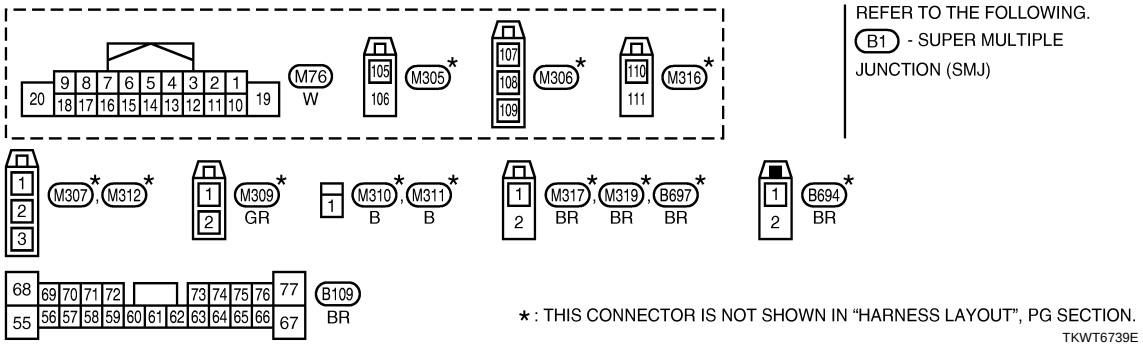




TKWT6738E

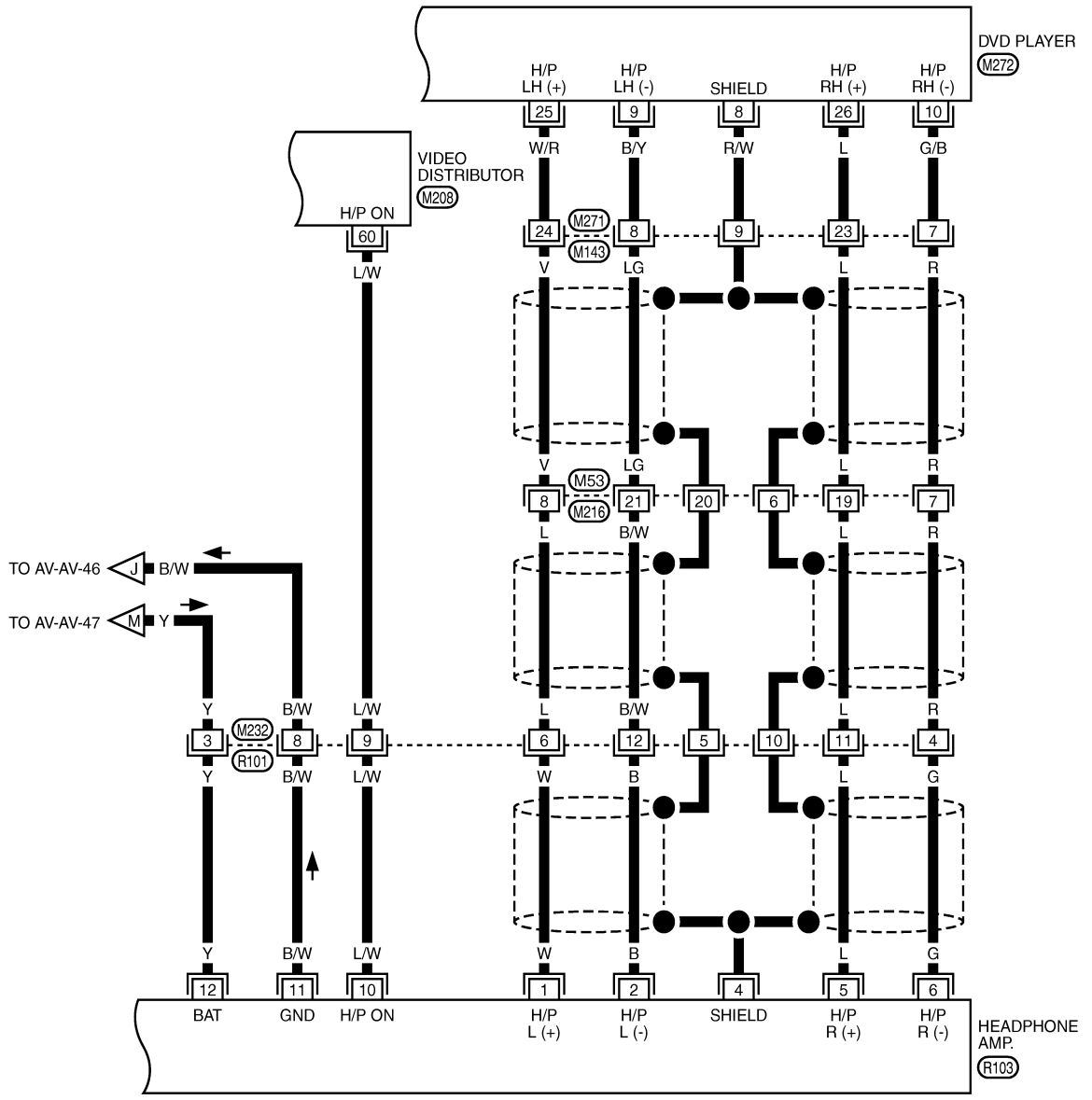
AV-AV-59

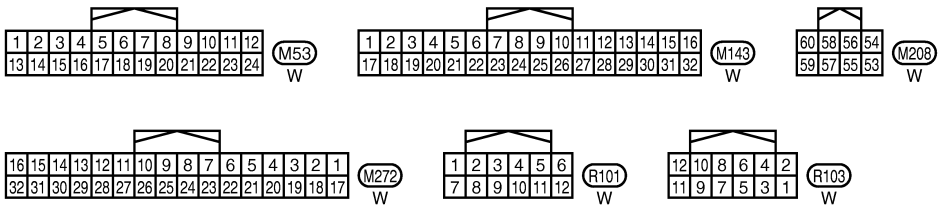




REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

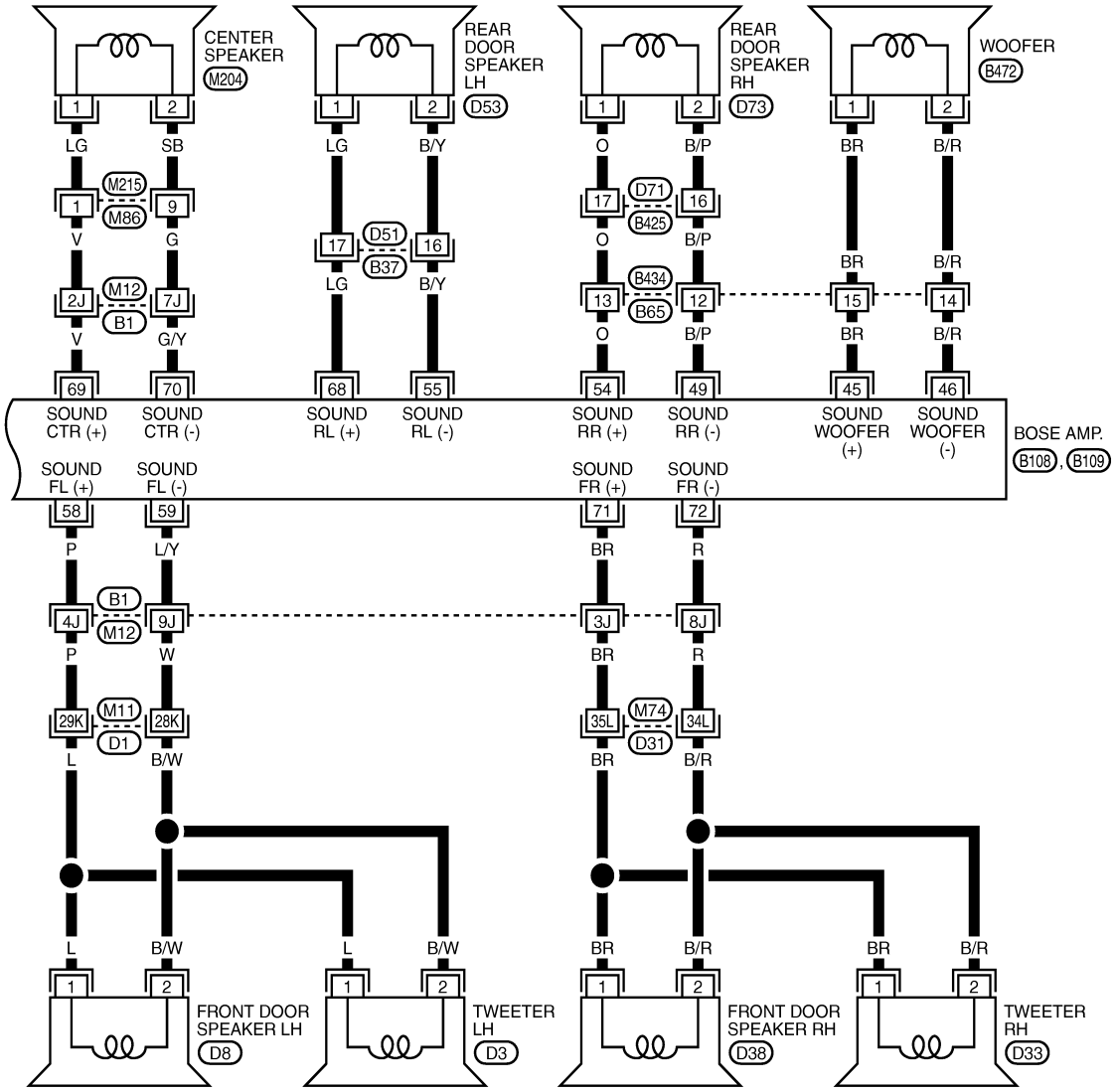
AV-AV-60



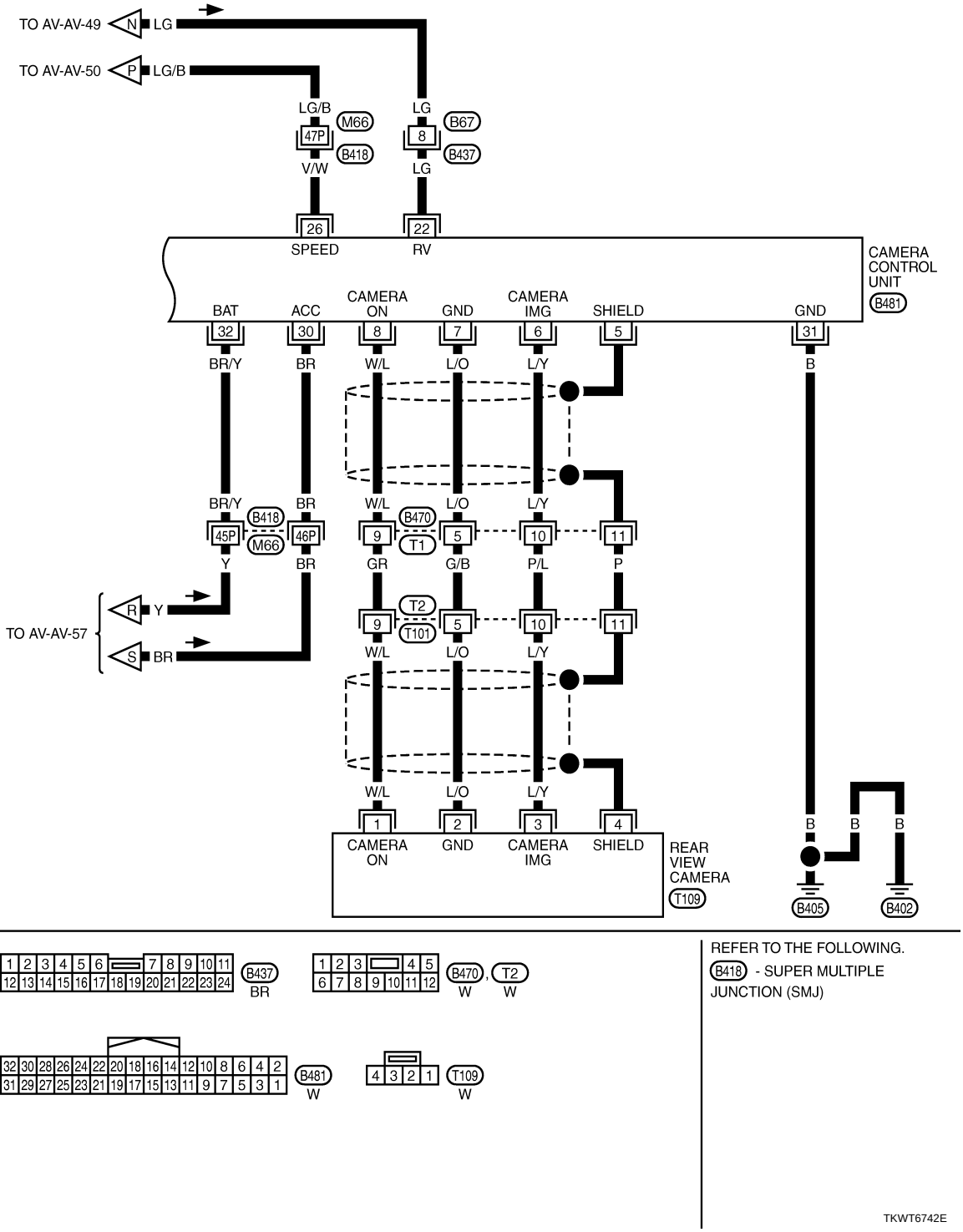


TKWT6740E

AV-AV-61


CENTER SPEAKER M204
REAR DOOR SPEAKER LH D53
REAR DOOR SPEAKER RH D73
WOOFER B472
SOUND CTR (+)
SOUND CTR (-)
SOUND RL (+)
SOUND RL (-)
SOUND RR (+)
SOUND RR (-)
SOUND WOOFER (+)
SOUND WOOFER (-)
SOUND FL (+)
SOUND FL (-)
SOUND FR (+)
SOUND FR (-)
BOSE AMP. B108, B109
FRONT DOOR SPEAKER LH D8
TWEETER LH D3
FRONT DOOR SPEAKER RH D38
TWEETER RH D33
M215 M86 M12 B1 D51 B37 D71 B425 B434 B65 M11 D1 M74 D31
REFER TO THE FOLLOWING.
B1, D1, D31 - SUPER MULTIPLE JUNCTION (SMJ)
M204, D3, D33 BR BR BR
M215 W
B37, B425 W W
B108 BR
B109 BR
B434 W
B472 W
D8, D38, D53, D73 BR BR BR BR
TKWT6741E

AV-AV-62

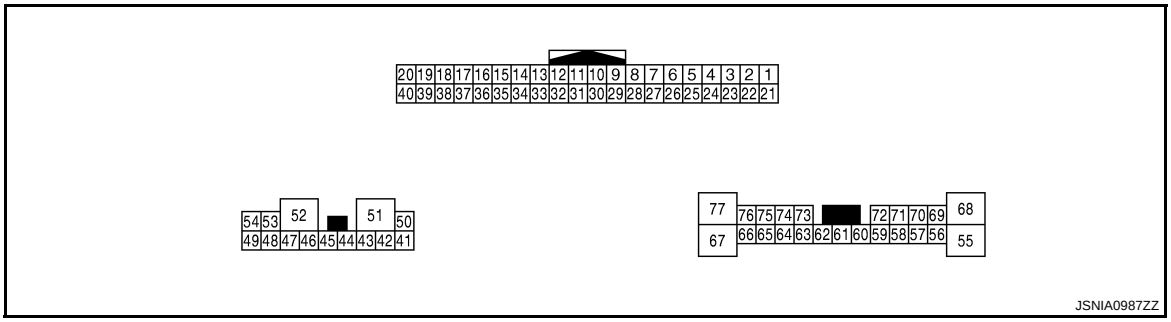


BOSE SURROUND AUDIO 5.1CH SYSTEM

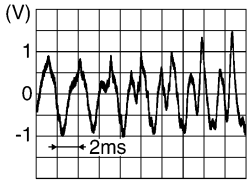
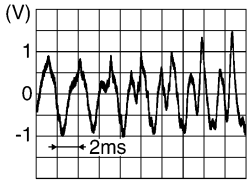
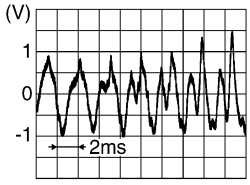
BOSE SURROUND AUDIO 5.1CH SYSTEM : Reference Value

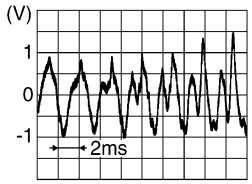
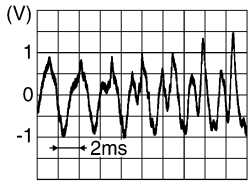
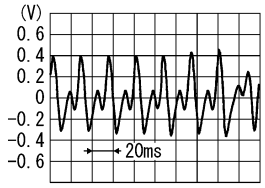
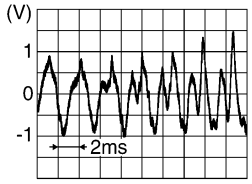
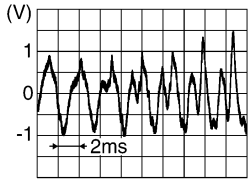
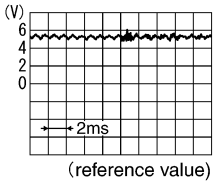
INFOID:0000000004156093

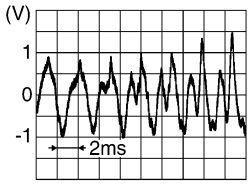
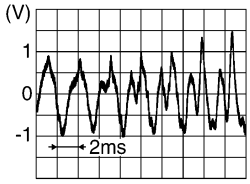
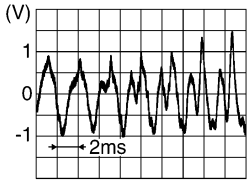
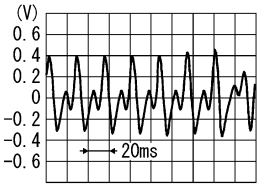
TERMINAL LAYOUT

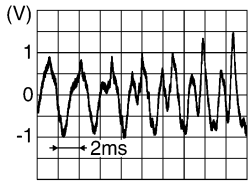
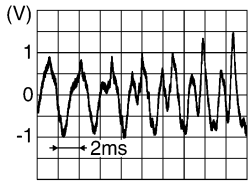
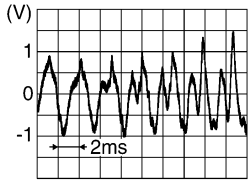
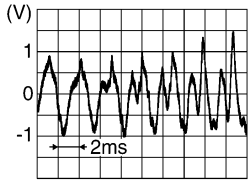
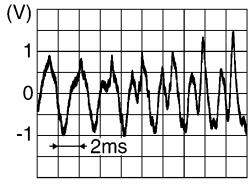
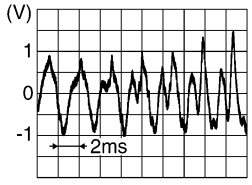


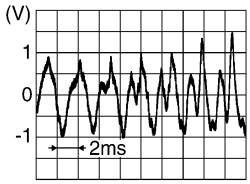
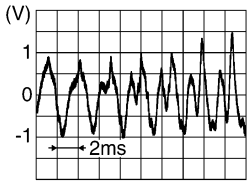
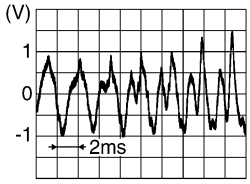
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
14 (G)	—	AV communication signal (L)	Input/ Output	—	—	—
15 (G)	—	AV communication signal (L)	Input/ Output	—	—	—
16 (BR)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
23 (L/R)	3 (R/L)	DVD surround signal front LH	Input	Ignition switch ON	When the DVD player is played.	 SKIB3609E
24 (B/Y)	4 (B/R)	DVD surround signal front RH	Input	Ignition switch ON	When the DVD player is played.	 SKIB3609E
25 (B)	5 (LG)	DVD surround signal rear LH	Input	Ignition switch ON	When the DVD player is played.	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
26 (W)	6 (L)	DVD surround signal rear RH	Input	Ignition switch ON	When the DVD player is played.	 SKIB3609E
27 (LG)	7 (R)	DVD surround signal center	Input	Ignition switch ON	When the DVD player is played.	 SKIB3609E
28 (BR)	8 (R/B)	DVD surround signal woofer	Input	Ignition switch ON	When the DVD player is played.	 PKIB6116J
29 (R/L)	9 (W)	Sound signal LH	Input	Ignition switch ON	Audio sound output. (except DVD mode)	 SKIB3609E
30 (P)	10 (L)	Sound signal RH	Input	Ignition switch ON	Audio sound output. (except DVD mode)	 SKIB3609E
31 (L)	11 (B/W)	MIC. signal (for AudioPilot®)	Input	Ignition switch ON	When inputting noise.	 (reference value) PKIA2104E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
32 (B/W)	12 (L)	Voice guidance signal	Input	Ignition switch ON	When inputting voice guidance.	 SKIB3609E
33	—	Shield	—	—	—	—
34 (R)	—	AV communication signal (H)	Input/ Output	—	—	—
35 (R)	—	AV communication signal (H)	Input/ Output	—	—	—
36	—	Shield	—	—	—	—
41 (L)	42 (B/W)	Sound signal front door speaker LH	Output	Ignition switch ON	Sound output.	 SKIB3609E
43 (BR)	44 (B/R)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
45 (BR)	46 (B/R)	Sound signal woofer	Output	Ignition switch ON	Sound output.	 PKIB6116J
47 (B/W)	Ground	Ground	—	Ignition switch ON	—	0 V
50 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
51 (R)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
52 (B/W)	Ground	Ground	—	Ignition switch ON	—	0 V

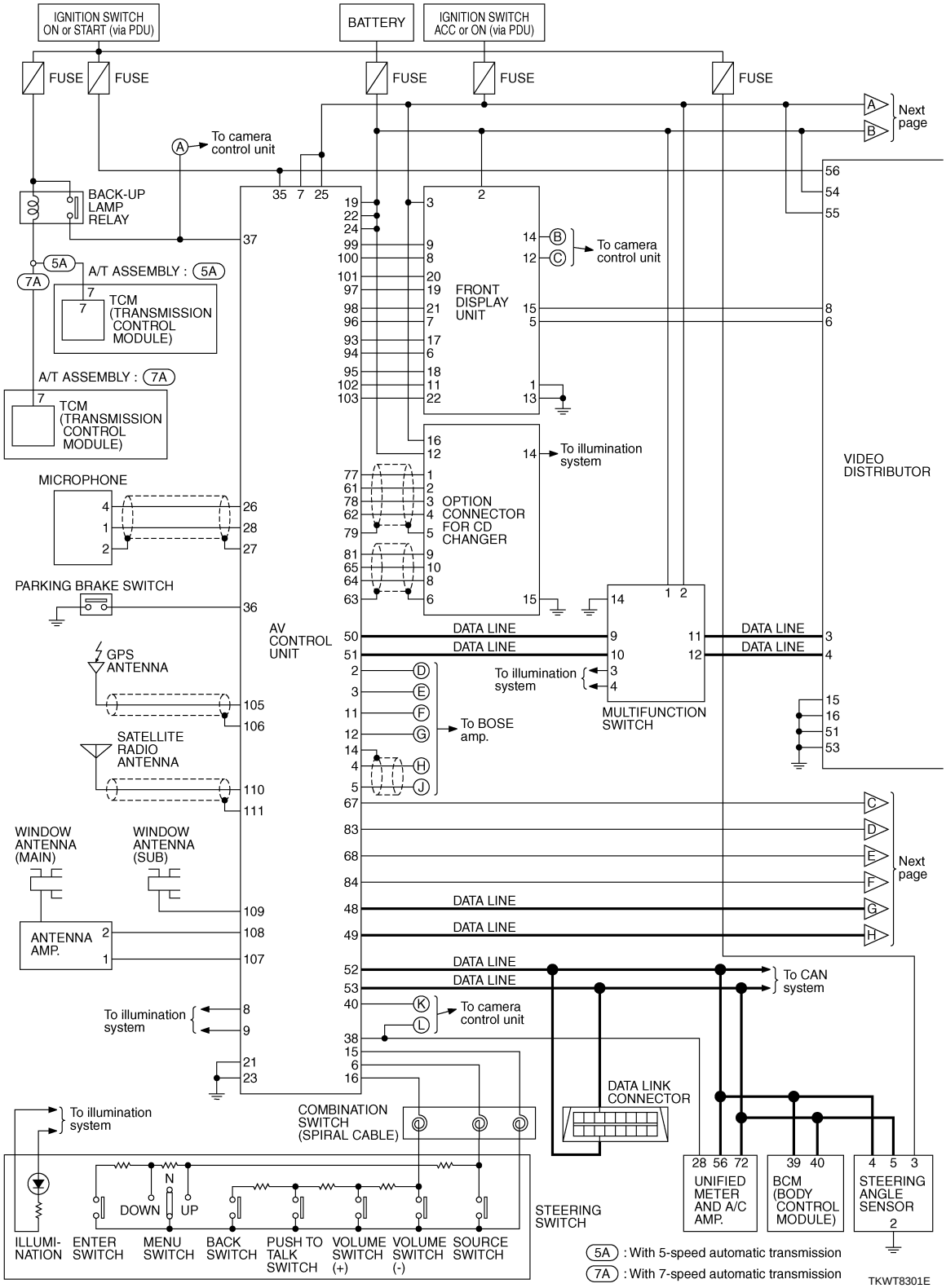
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
54 (LG)	49 (B/Y)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output.	 SKIB3609E
56 (B/W)	69 (L)	Sound signal passenger seat speaker LH	Output	Ignition switch ON	Sound output.	 SKIB3609E
57 (O/B)	58 (W/R)	Sound signal center speaker	Output	Ignition switch ON	Sound output.	 SKIB3609E
59 (B)	72 (W)	Sound signal rear surround speaker LH	Output	Ignition switch ON	Sound output.	 SKIB3609E
62 (G/Y)	73 (GR/R)	Sound signal rear surround speaker RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
63 (B/W)	74 (L)	Sound signal driver seat speaker LH	Output	Ignition switch ON	Sound output.	 SKIB3609E

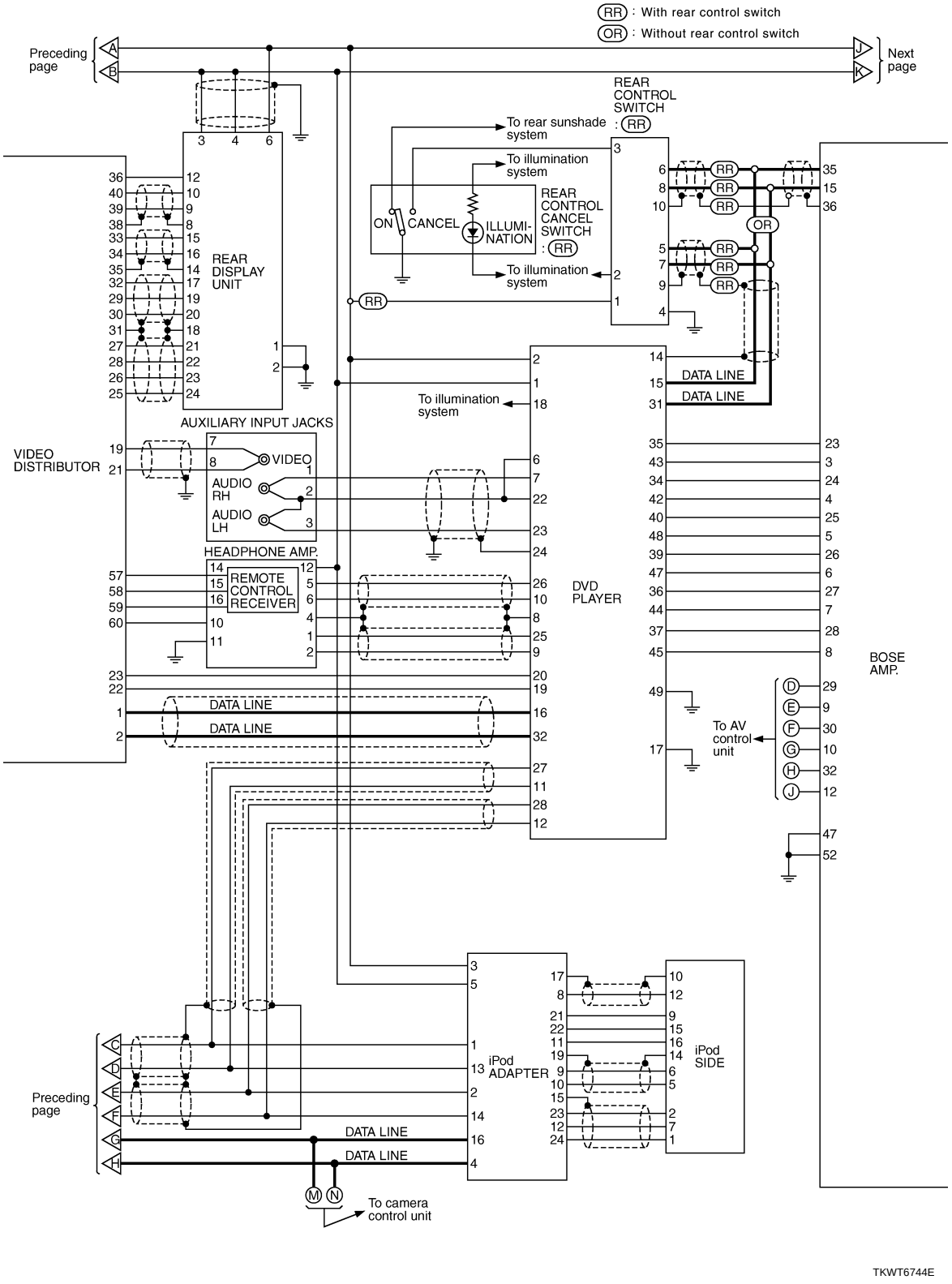
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
64 (B/R)	75 (BR)	Sound signal driver seat speaker RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
68 (O)	55 (B/P)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
71 (Y)	70 (BR)	Sound signal passenger seat speaker RH	Output	Ignition switch ON	Sound output.	 SKIB3609E

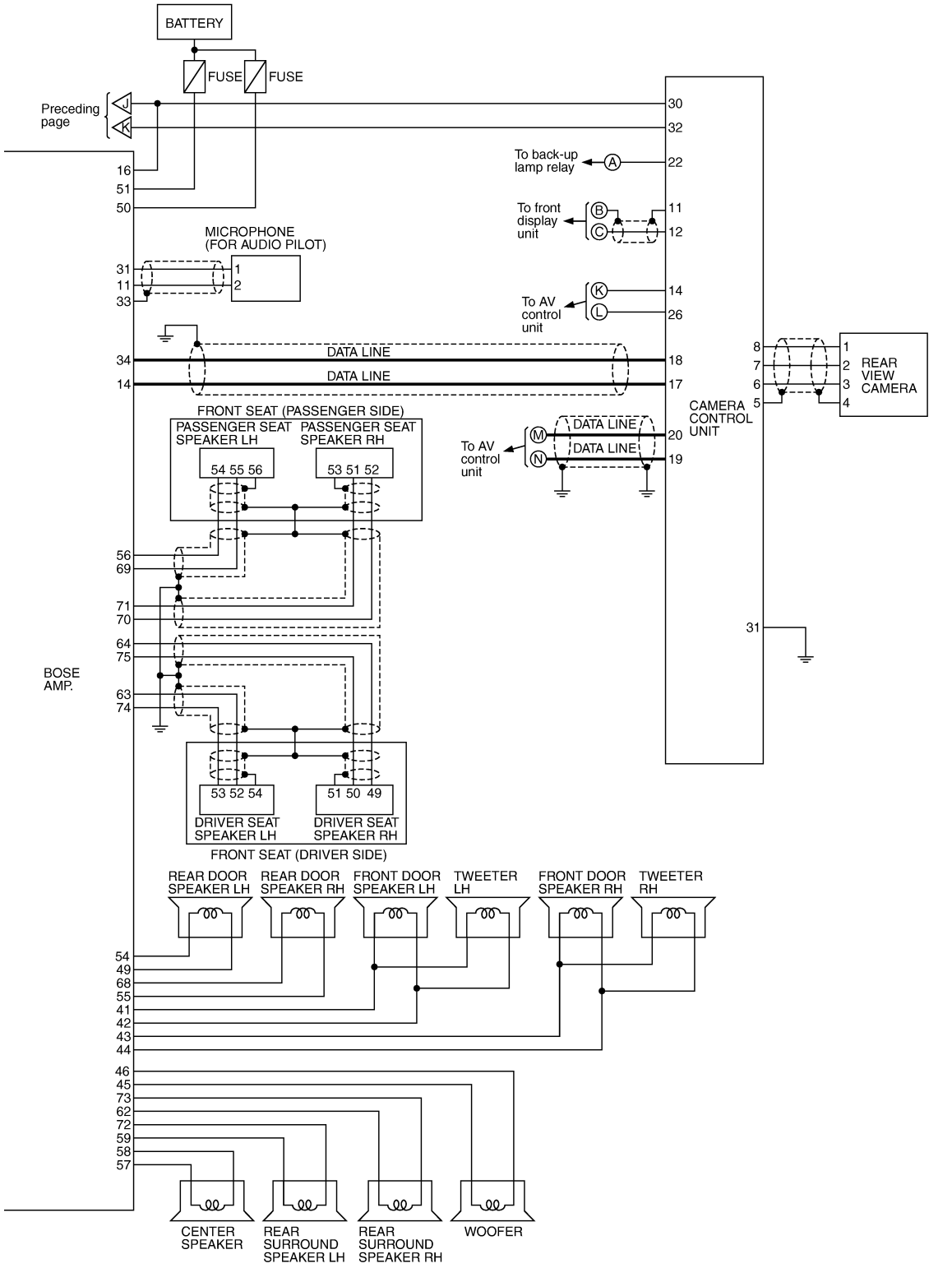
BOSE SURROUND AUDIO 5.1CH SYSTEM : Schematic - BOSE 5.1ch Surround Au-

dio System -

INFOID:0000000004391608




RR : With rear control switch
OR : Without rear control switch
Preceding page
Next page
REAR CONTROL SWITCH : RR
To rear sunshade system
To illumination system
REAR CONTROL CANCEL SWITCH : RR
ON
CANCEL
ILLUMI-NATION
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
DVD PLAYER
DATA LINE
BOSE AMP.
To AV control unit
iPod ADAPTER
iPod SIDE
To camera control unit
TKWT6744E



TKWT6745E

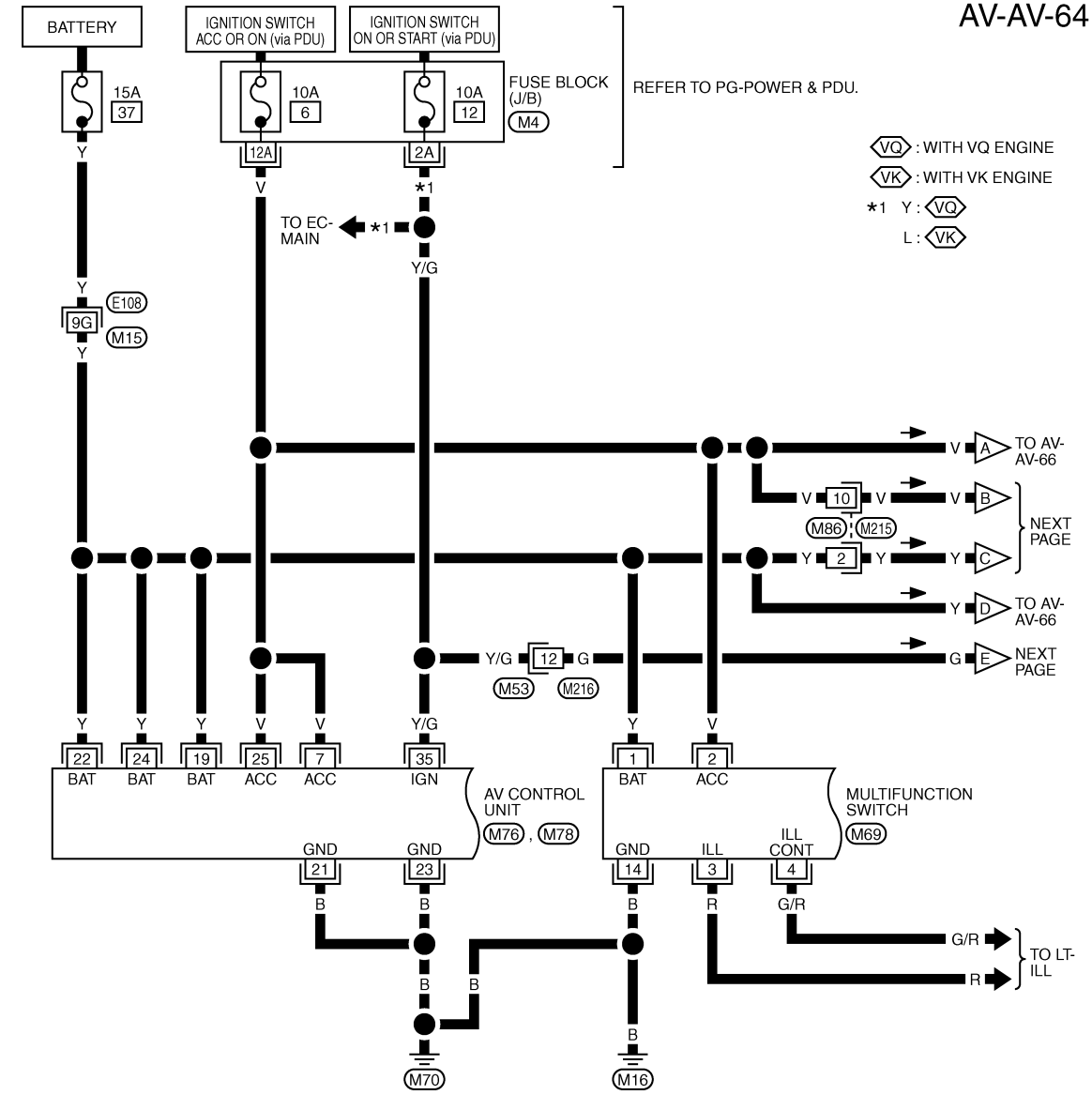
BOSE SURROUND AUDIO 5.1CH SYSTEM : Wiring Diagram - AV - / BOSE Surround Audio 5.1ch System

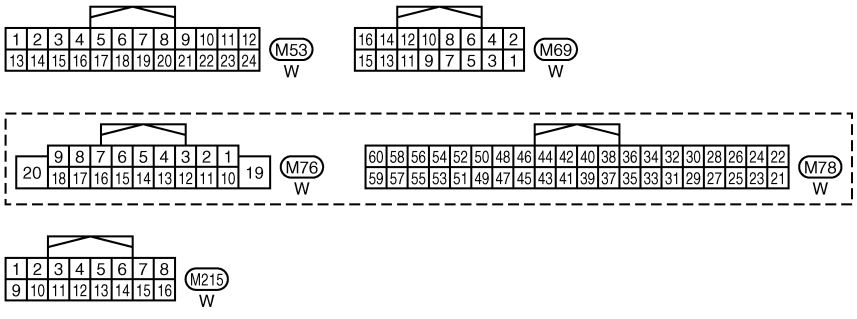
INFOID:0000000004391609

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

AV-AV-64

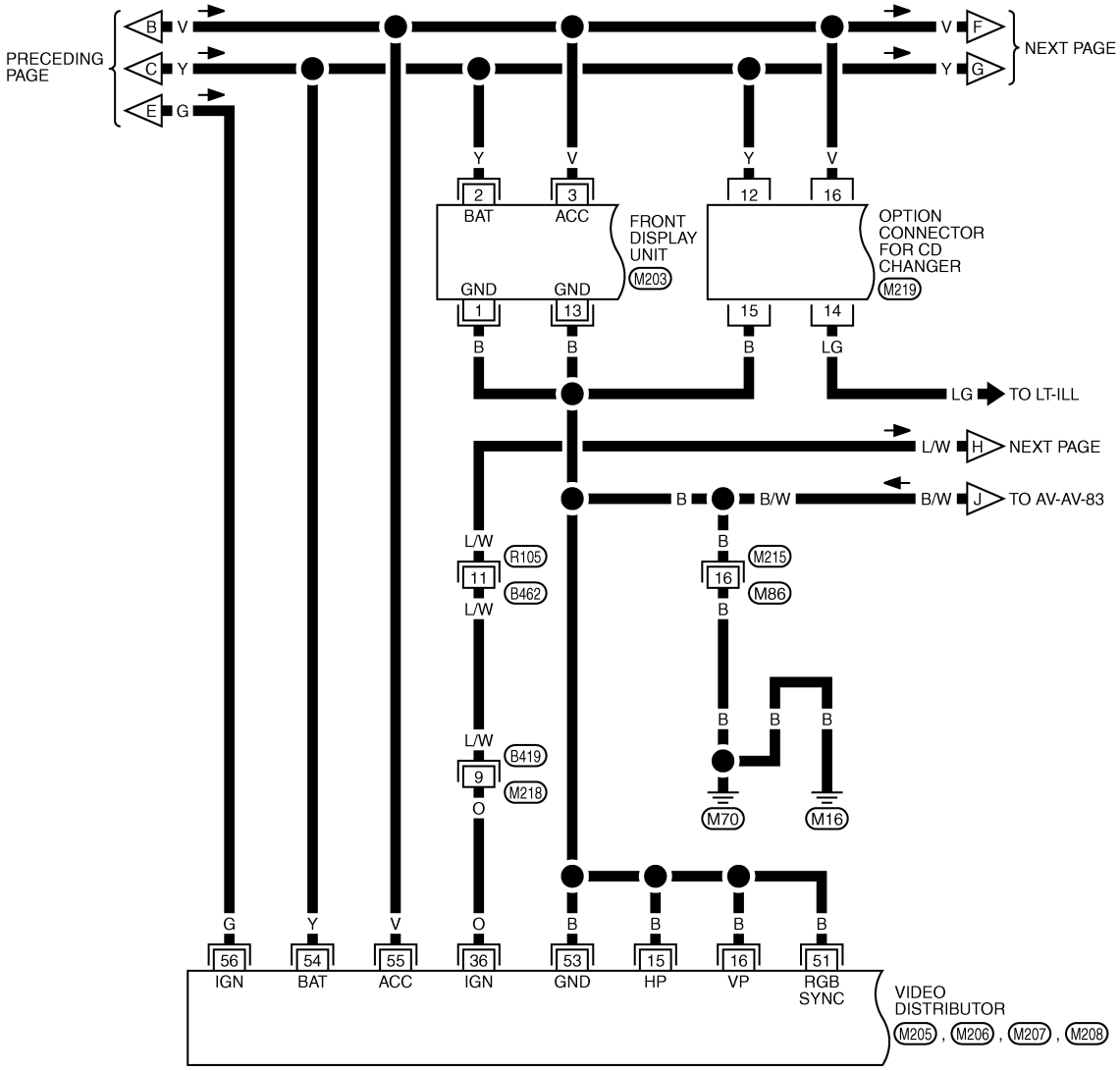


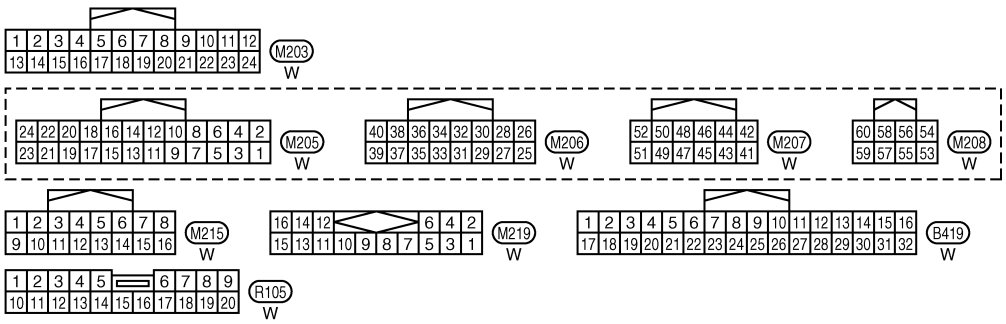


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8302E

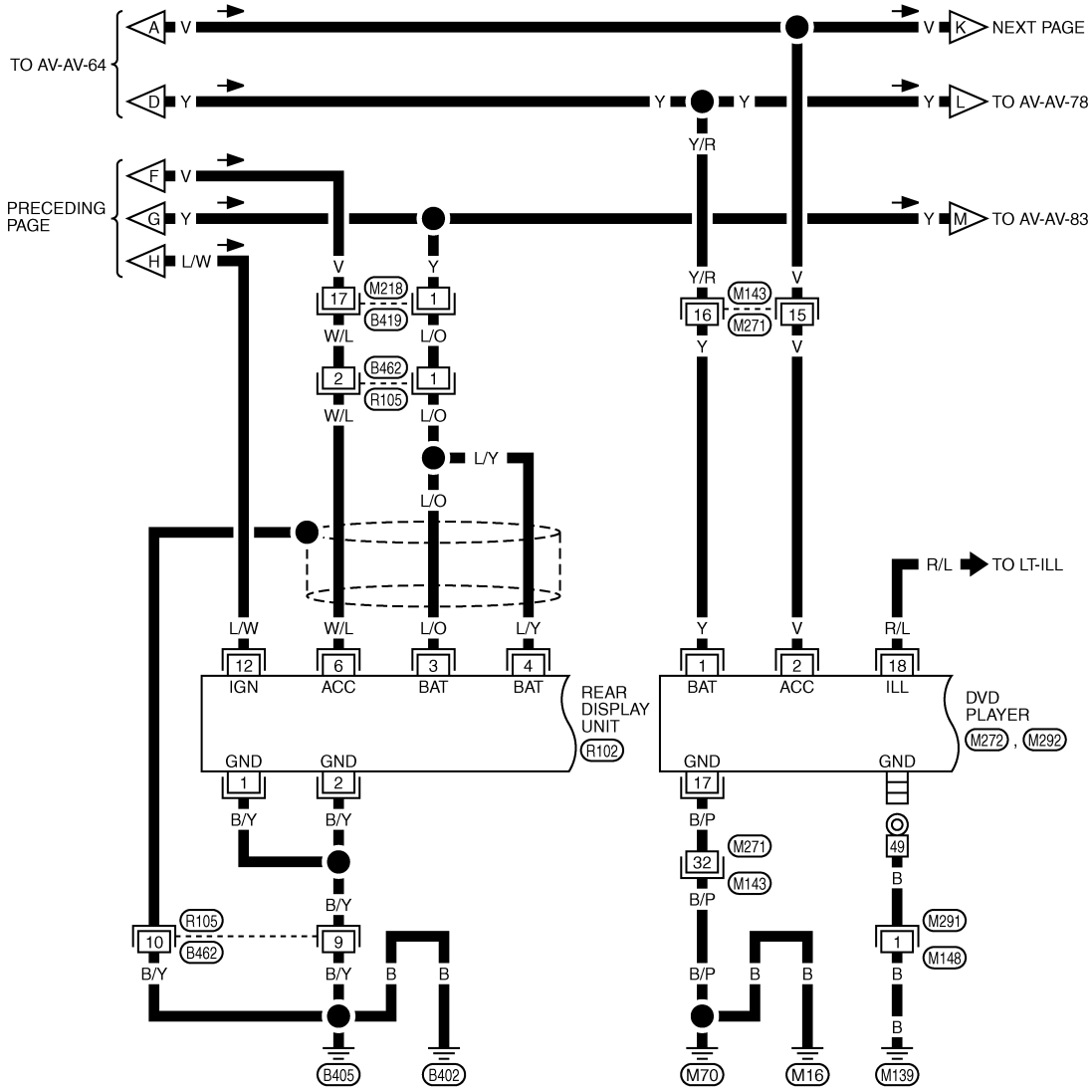
AV-AV-65

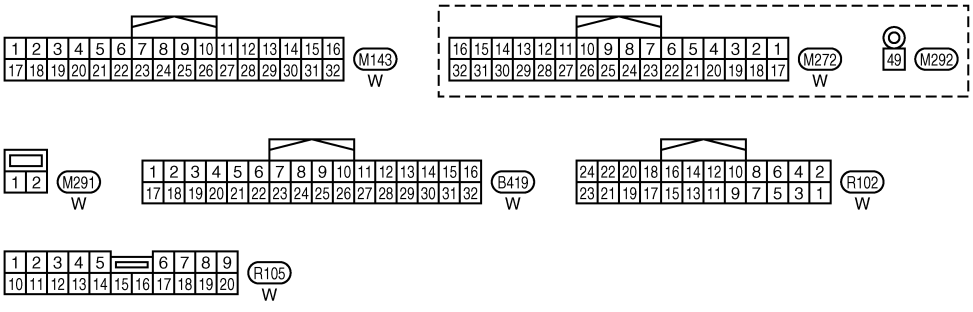




TKWT8303E

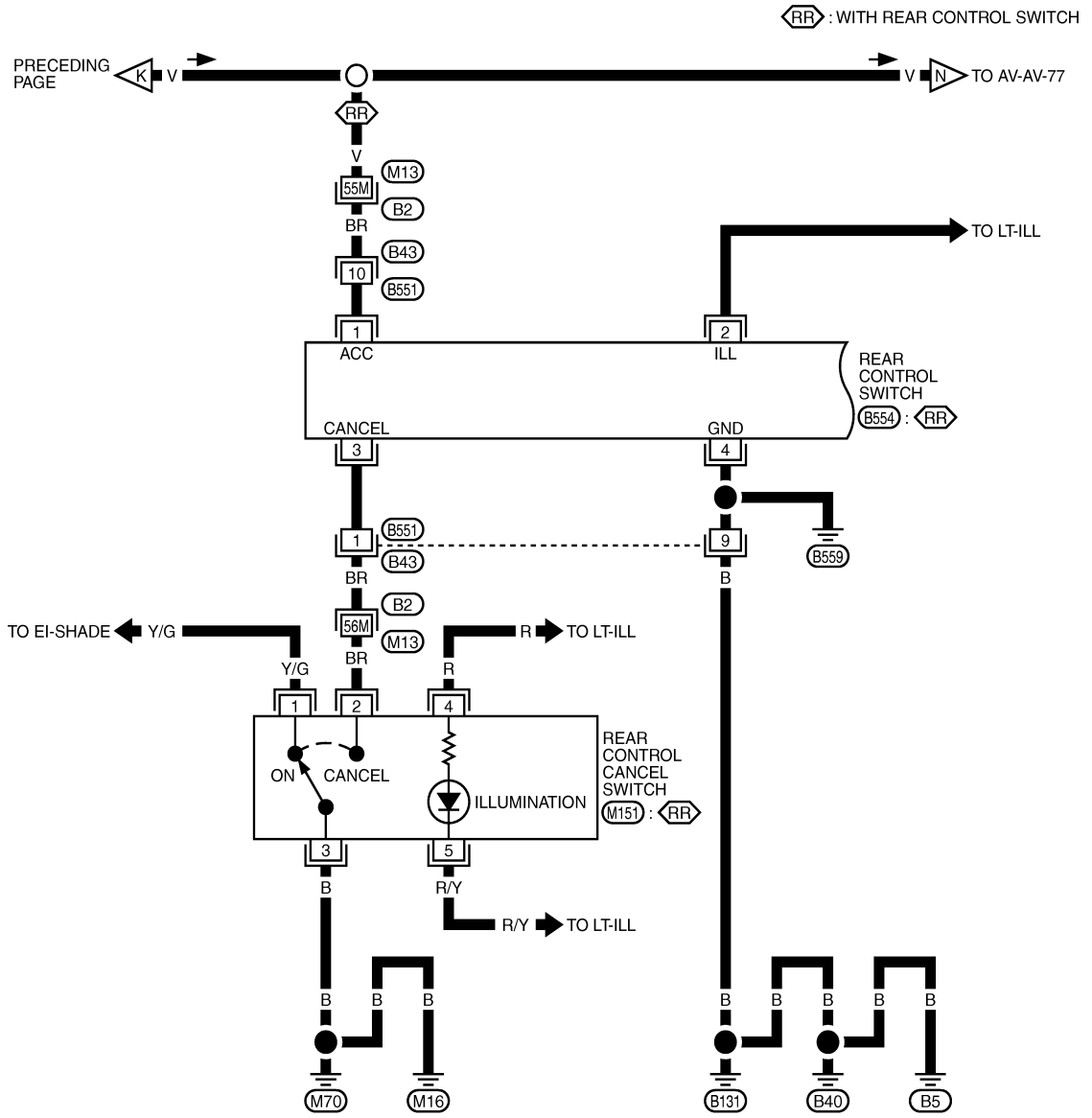
AV-AV-66

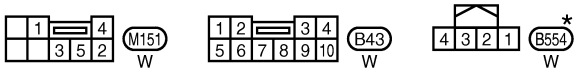




TKWT8304E

AV-AV-67



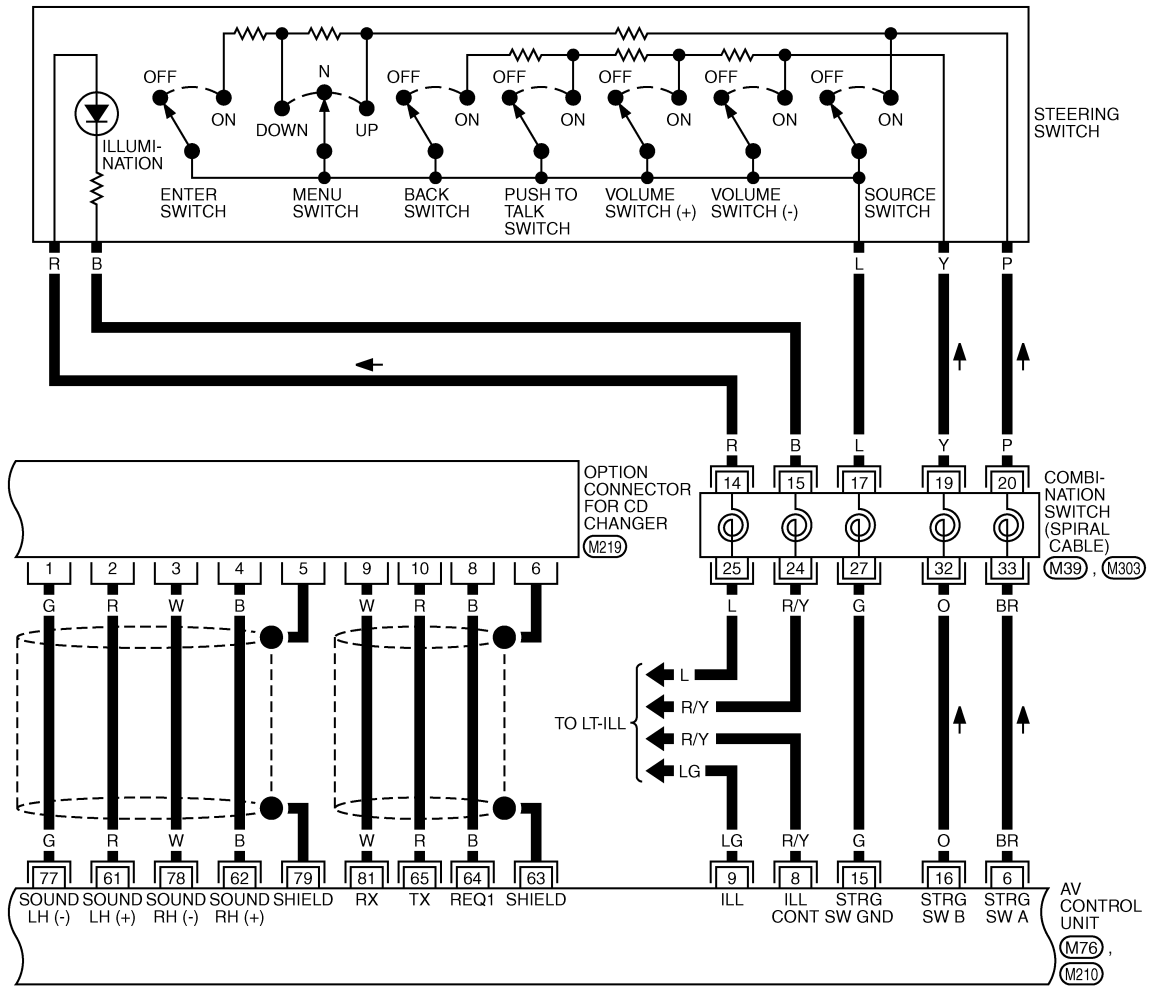


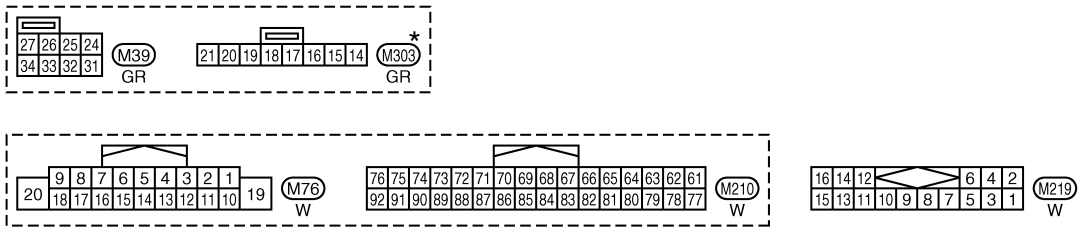
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6749E

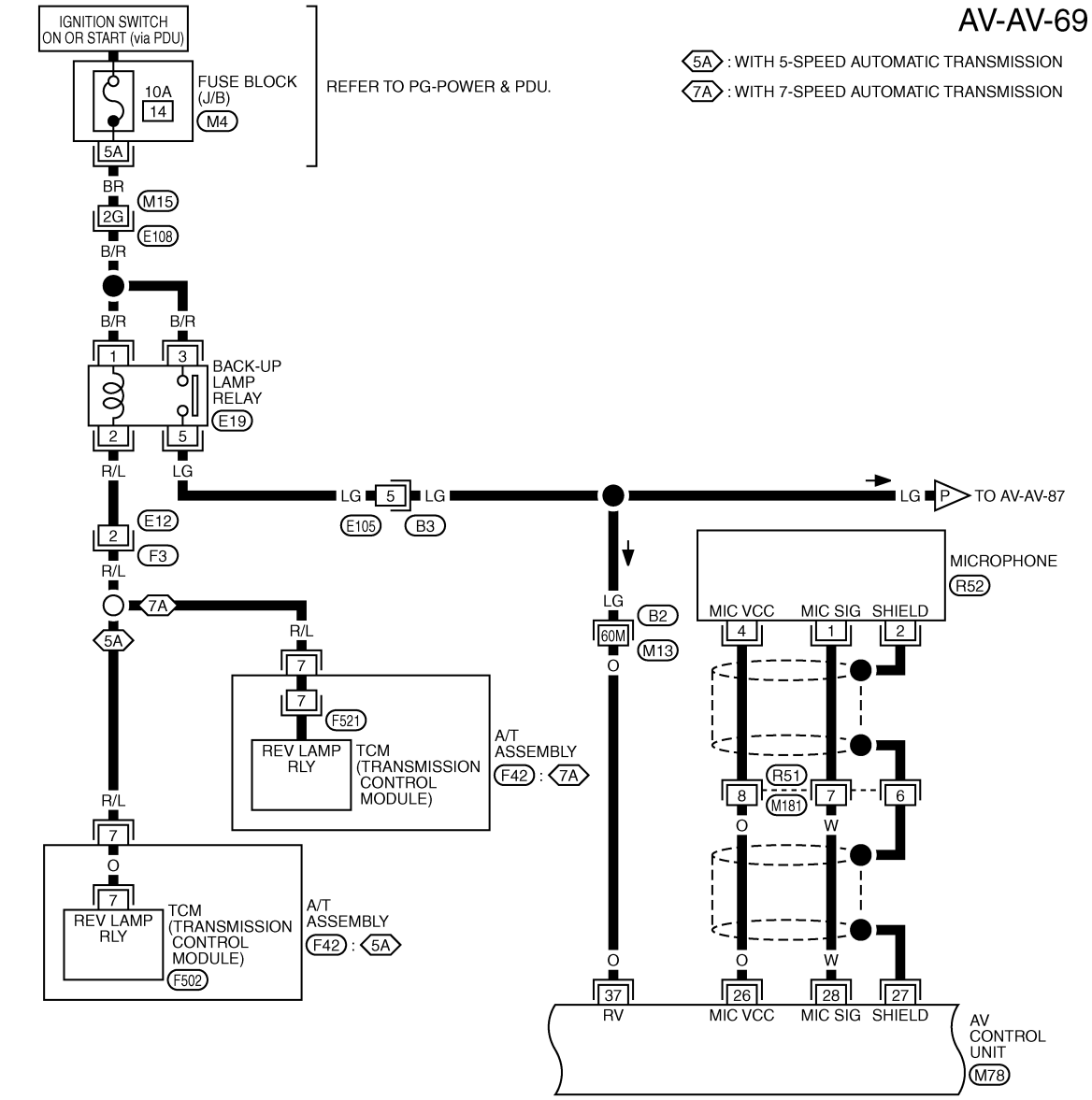
AV-AV-68





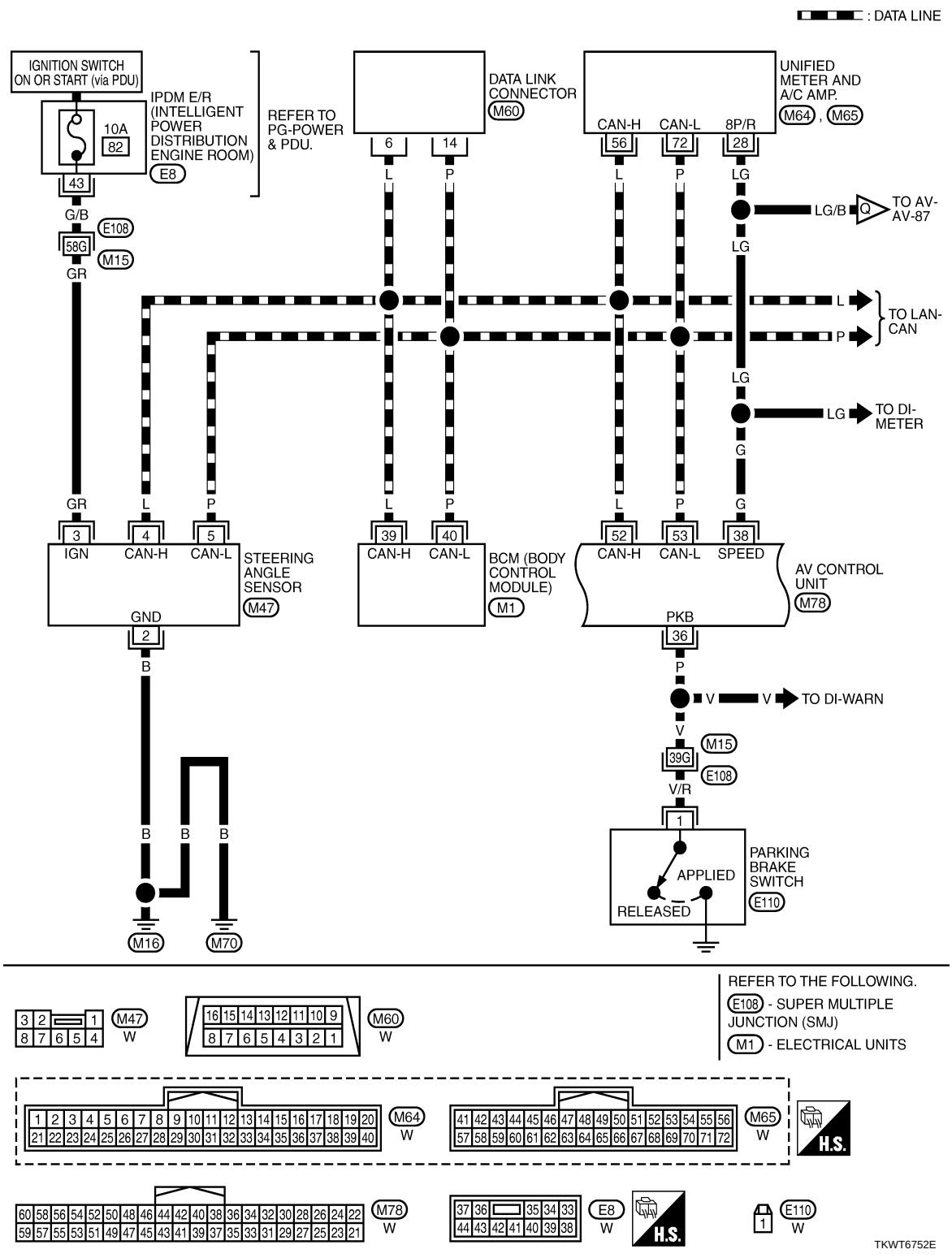
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8305E

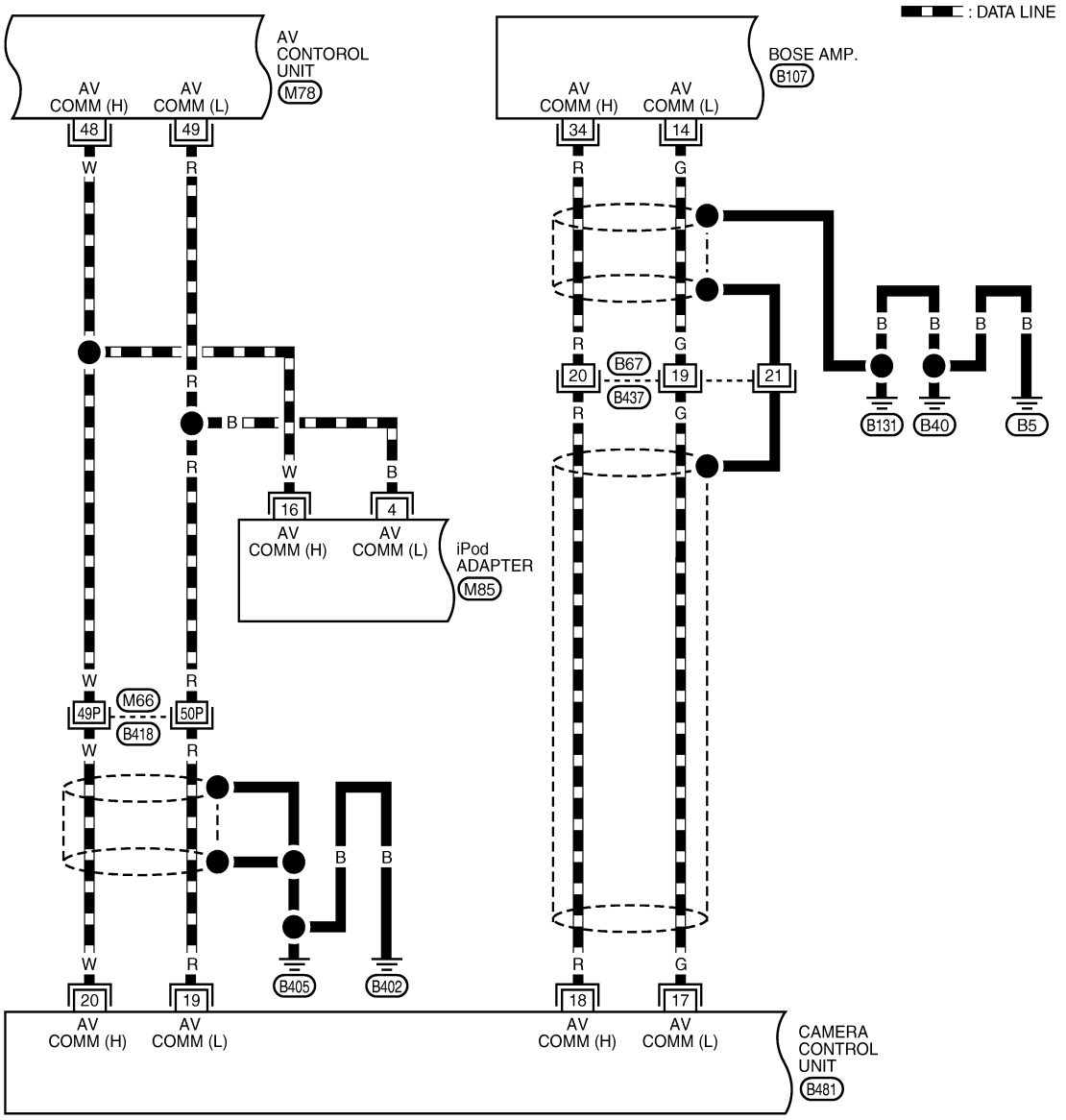

AV-AV-69
5A : WITH 5-SPEED AUTOMATIC TRANSMISSION
7A : WITH 7-SPEED AUTOMATIC TRANSMISSION
IGNITION SWITCH ON OR START (via PDU)
FUSE BLOCK (J/B)
M4
10A
14
5A
REFER TO PG-POWER & PDU.
BR
M15
2G
E108
B/R
BACK-UP LAMP RELAY
E19
R/L
LG
E12
F3
E105
B3
TO AV-AV-87
MICROPHONE
R52
MIC VCC
MIC SIG
SHIELD
B2
60M
M13
7A
REV LAMP RLY
TCM (TRANSMISSION CONTROL MODULE)
F521
A/T ASSEMBLY
F42 : 7A
F502
F42 : 5A
R51
M181
AV CONTROL UNIT
M78
RV
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)
M78 W
E19 L
F3 B
F42 G
F502 GR
F521 G
B3 W
R51 W
R52 W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

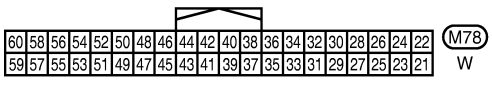
TKWT8306E

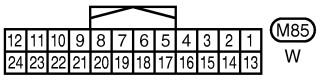
AV-AV-70

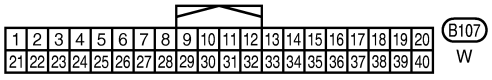

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
G/B
E108
58G
M15
GR
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
L
P
UNIFIED METER AND A/C AMP. M64, M65
CAN-H
CAN-L
8P/R
56
72
28
L
P
LG
LG/B
Q
TO AV-AV-87
LG
L
P
TO LAN-CAN
LG
LG
TO DI-METER
G
GR
L
P
3
4
5
IGN
CAN-H
CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE) M1
52
53
38
CAN-H
CAN-L
SPEED
AV CONTROL UNIT M78
PKB
36
P
V
V
TO DI-WARN
V
39G
M15
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B
B
B
M16
M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47
W
M60
W
M64
W
M65
W
H.S.
M78
W
E8
W
E110
W
TKWT6752E

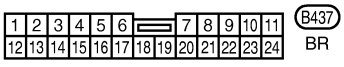
AV-AV-71

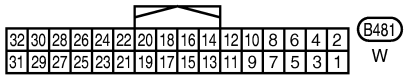








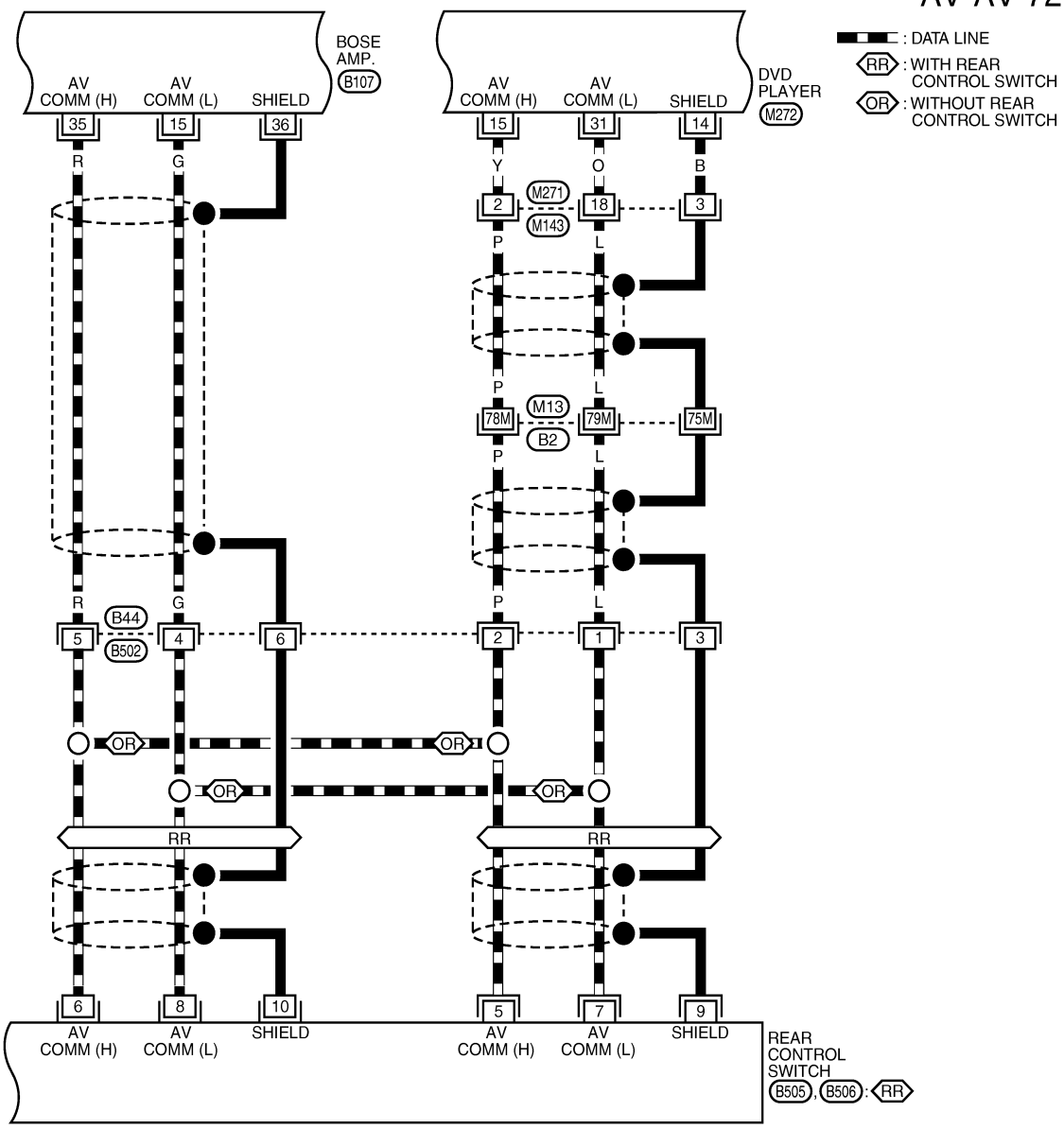


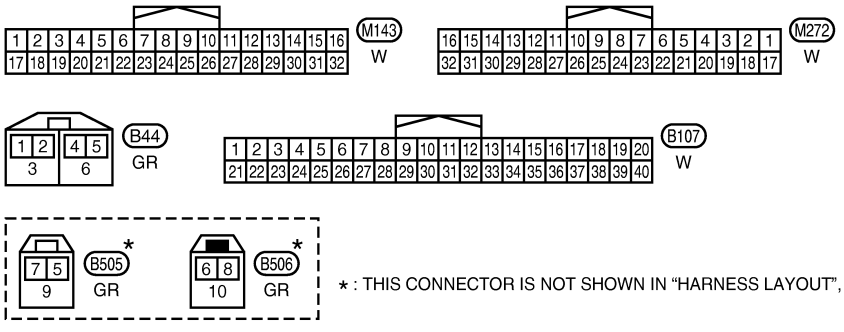


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6753E

AV-AV-72

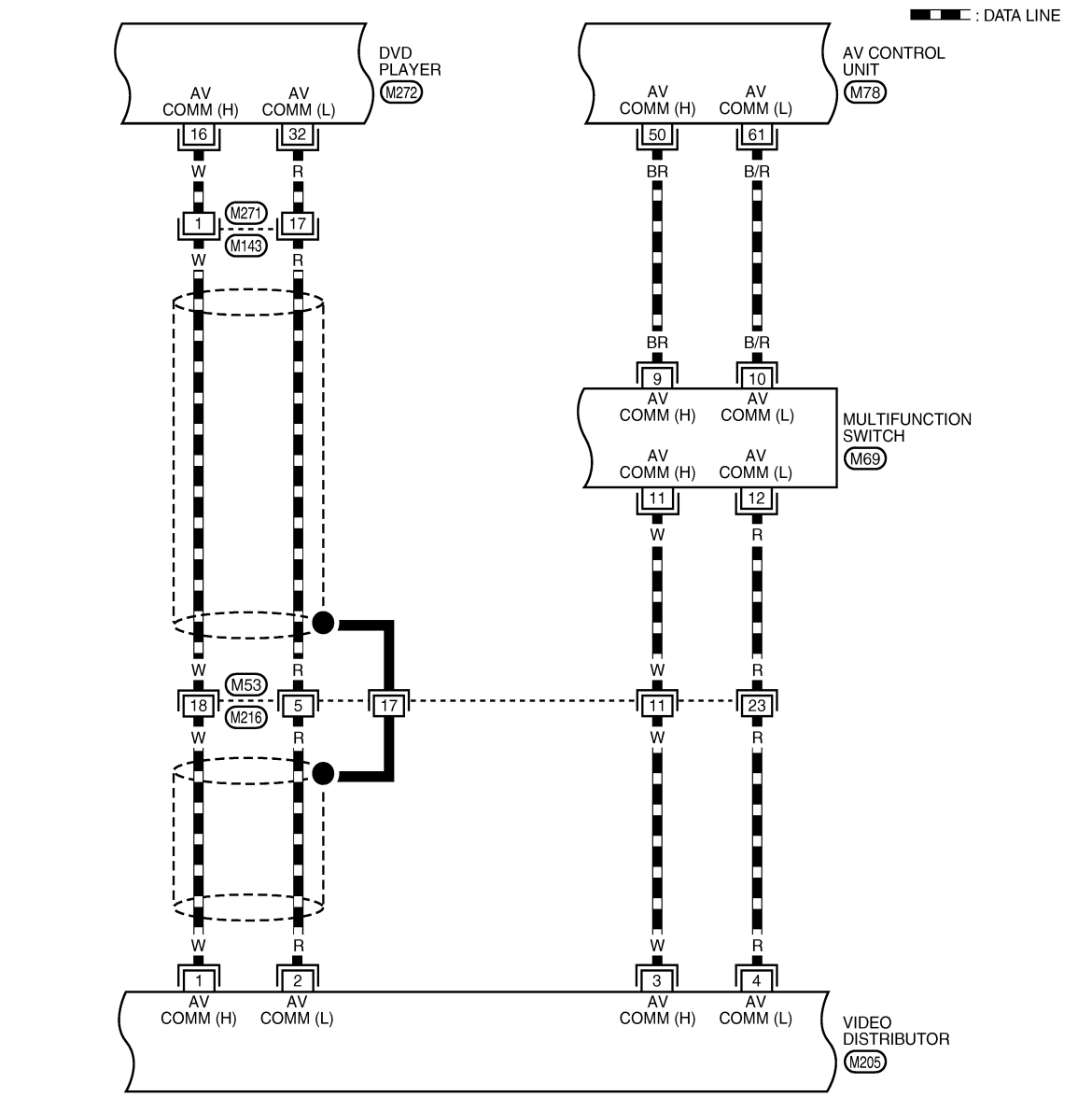


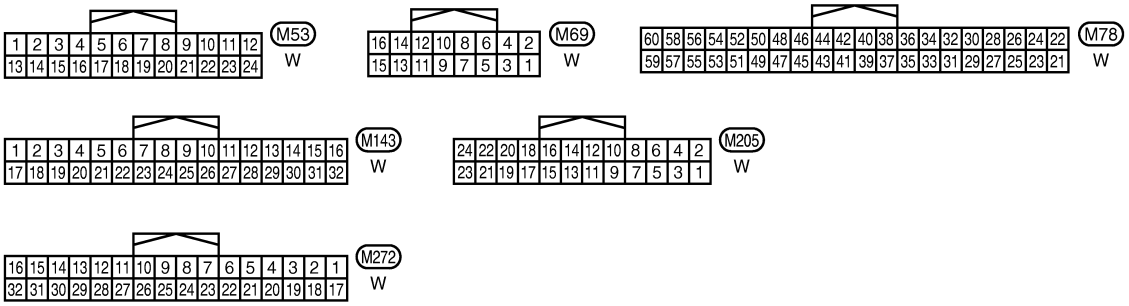


REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6754E

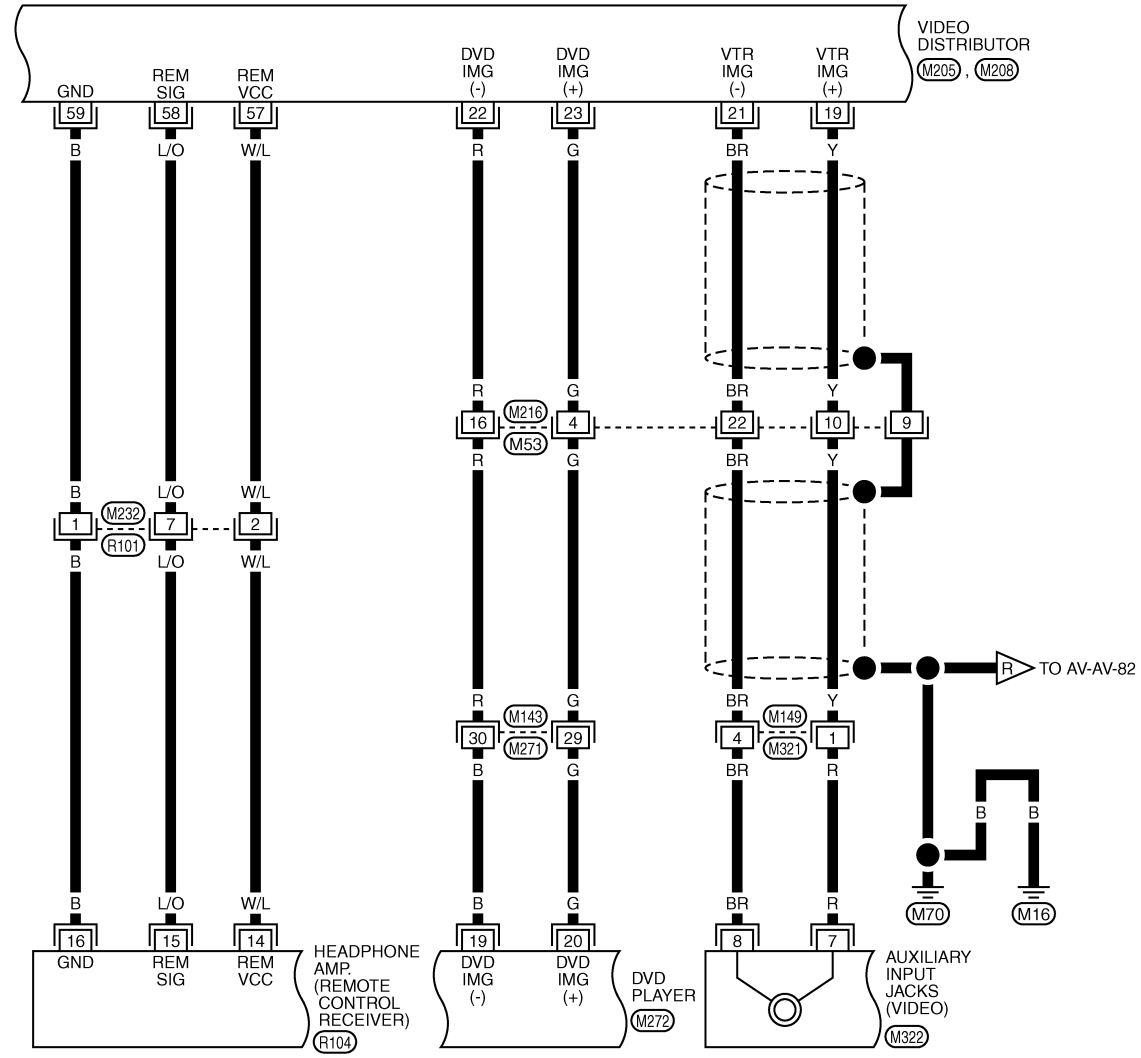
AV-AV-73





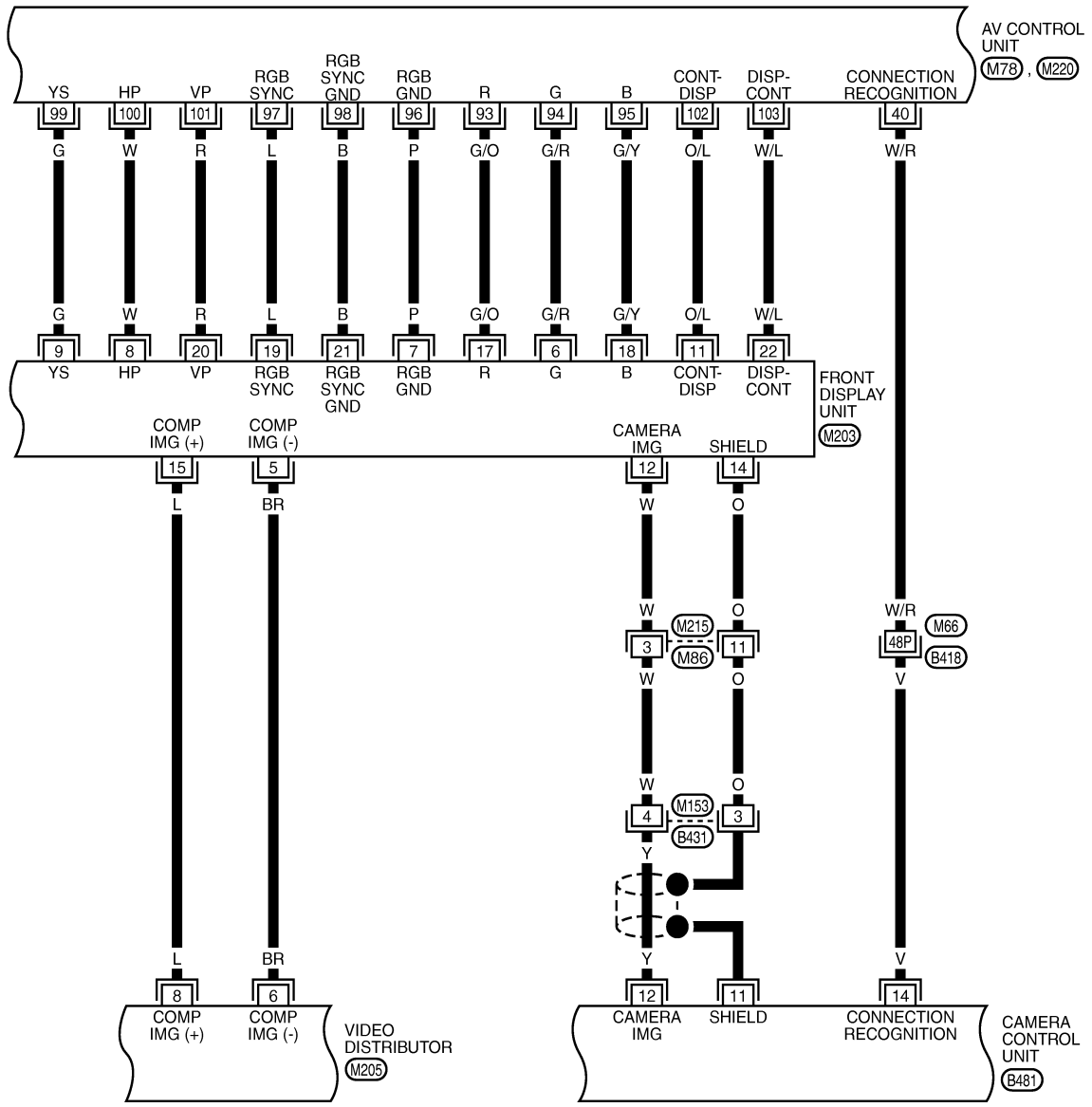
TKWT6755E

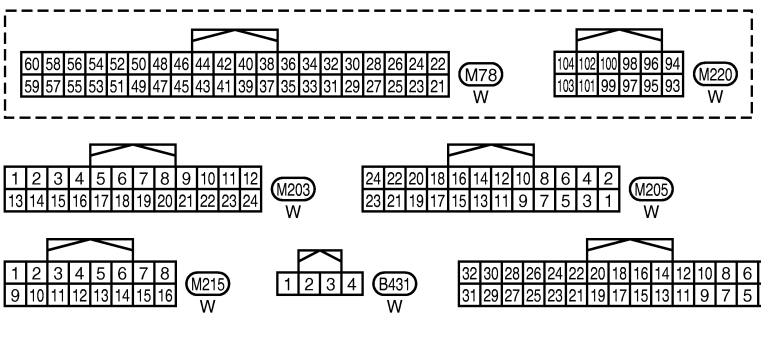
AV-AV-74



TKWT8307E

AV-AV-75

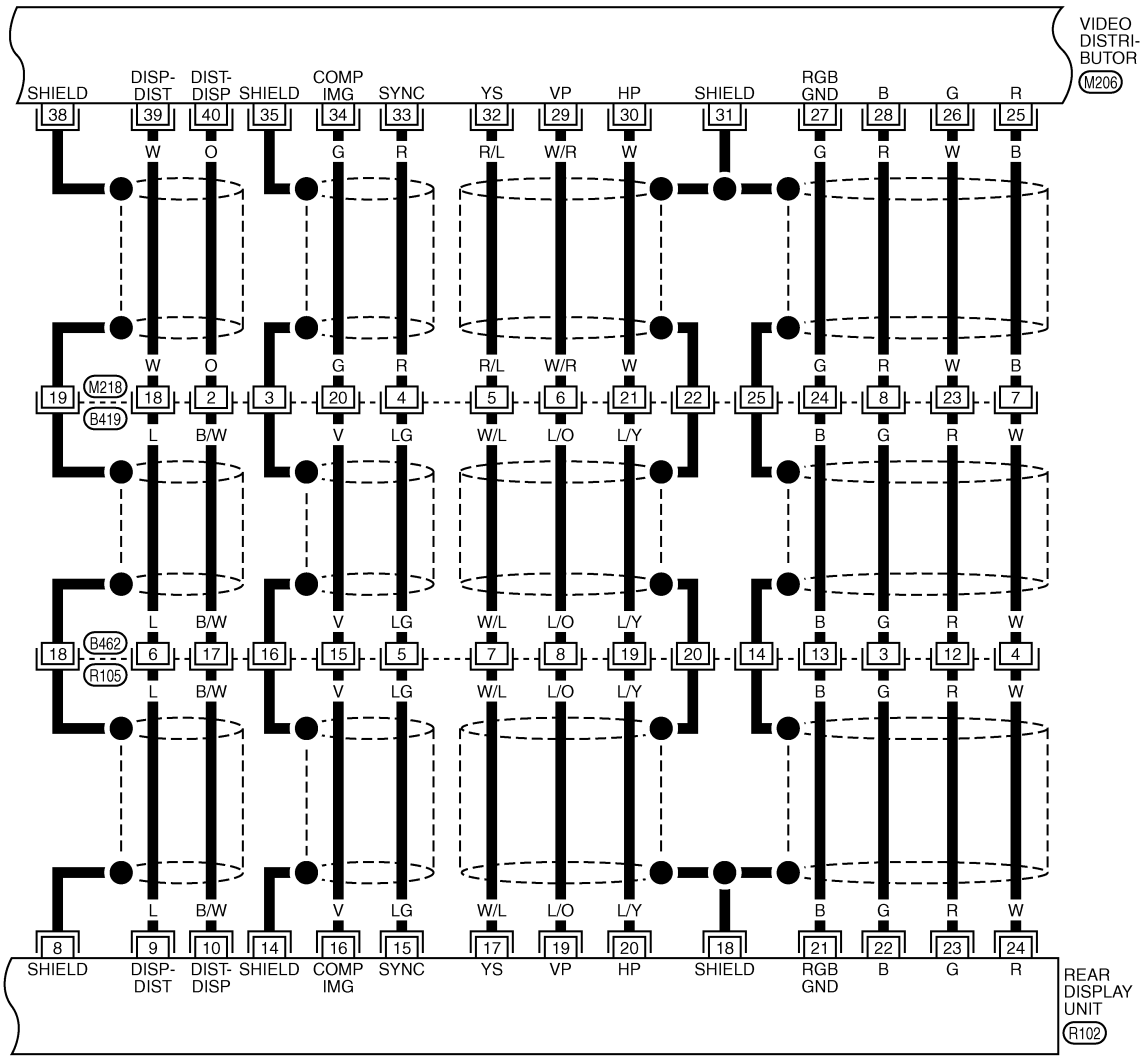


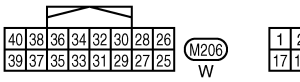


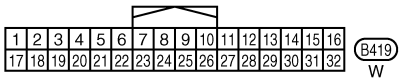
REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

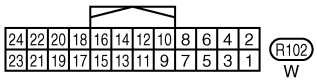
TKWT6757E

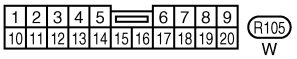
AV-AV-76





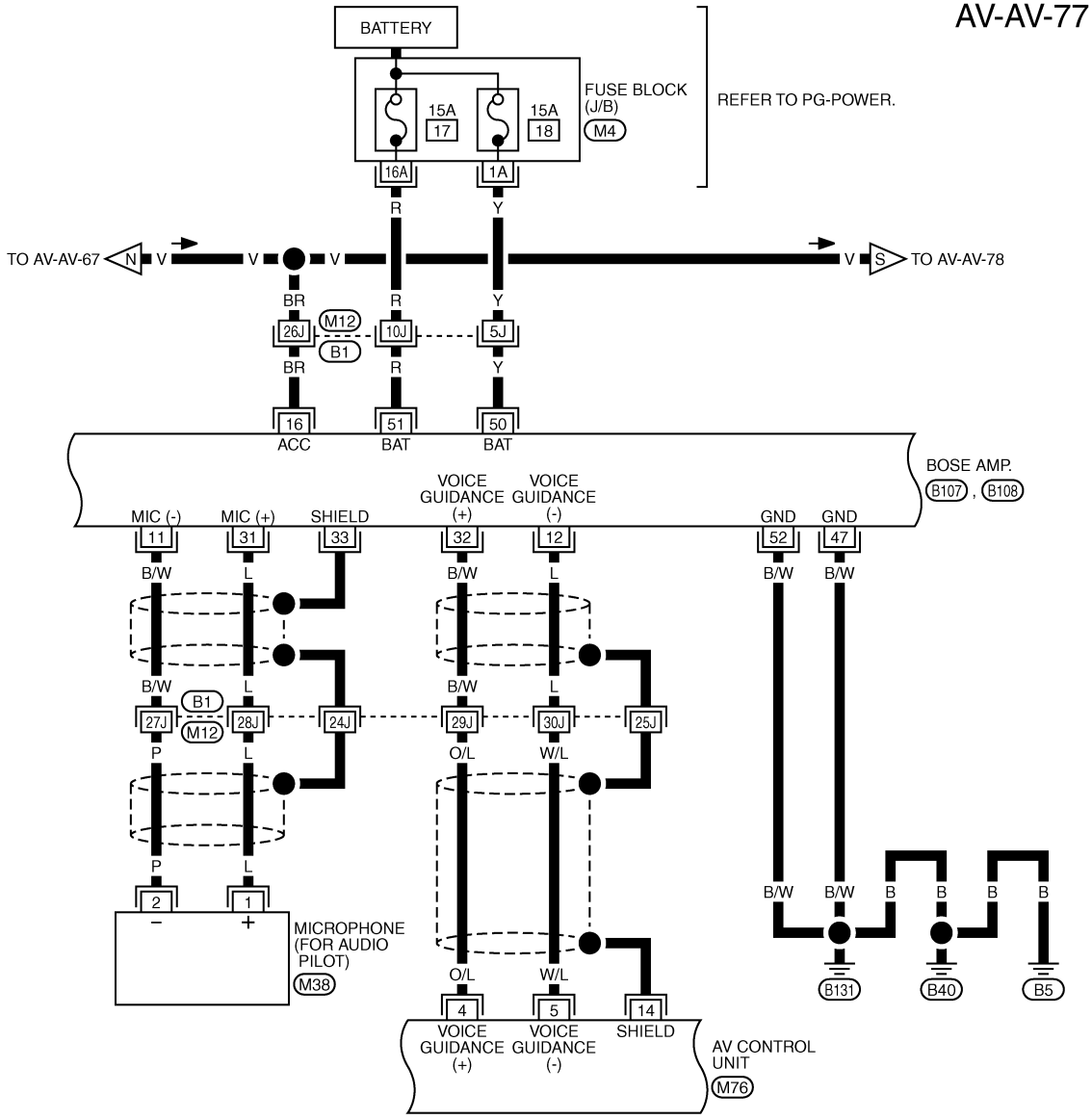


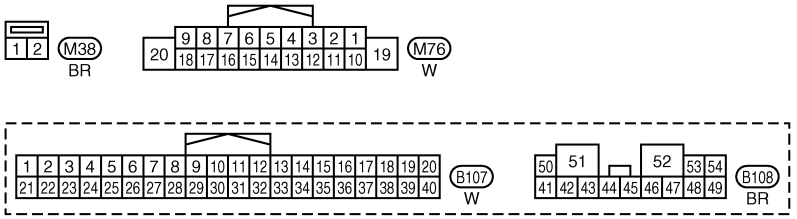




TKWT5152E

AV-AV-77





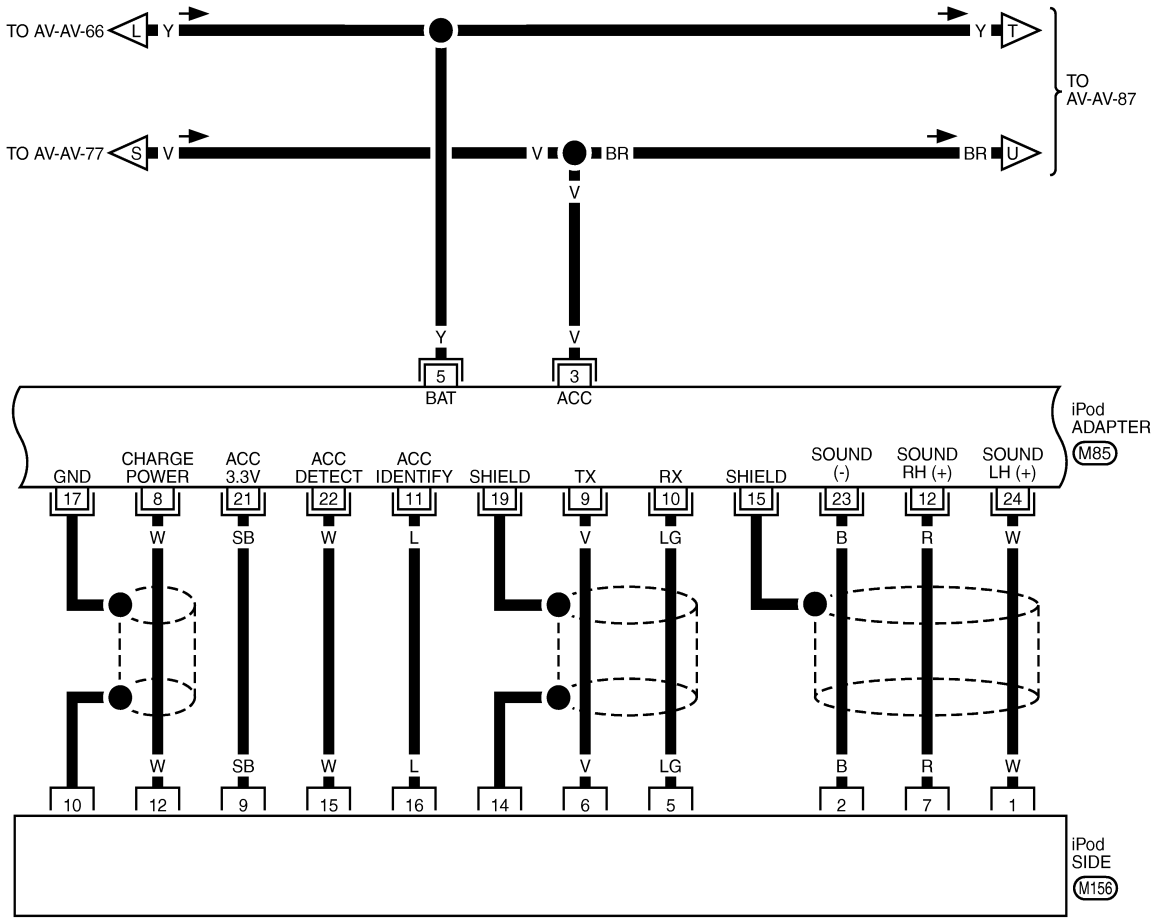
REFER TO THE FOLLOWING.

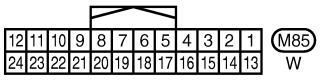
B1 -SUPER MULTIPLE JUNCTION (SMJ)

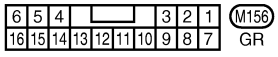
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8308E

AV-AV-78

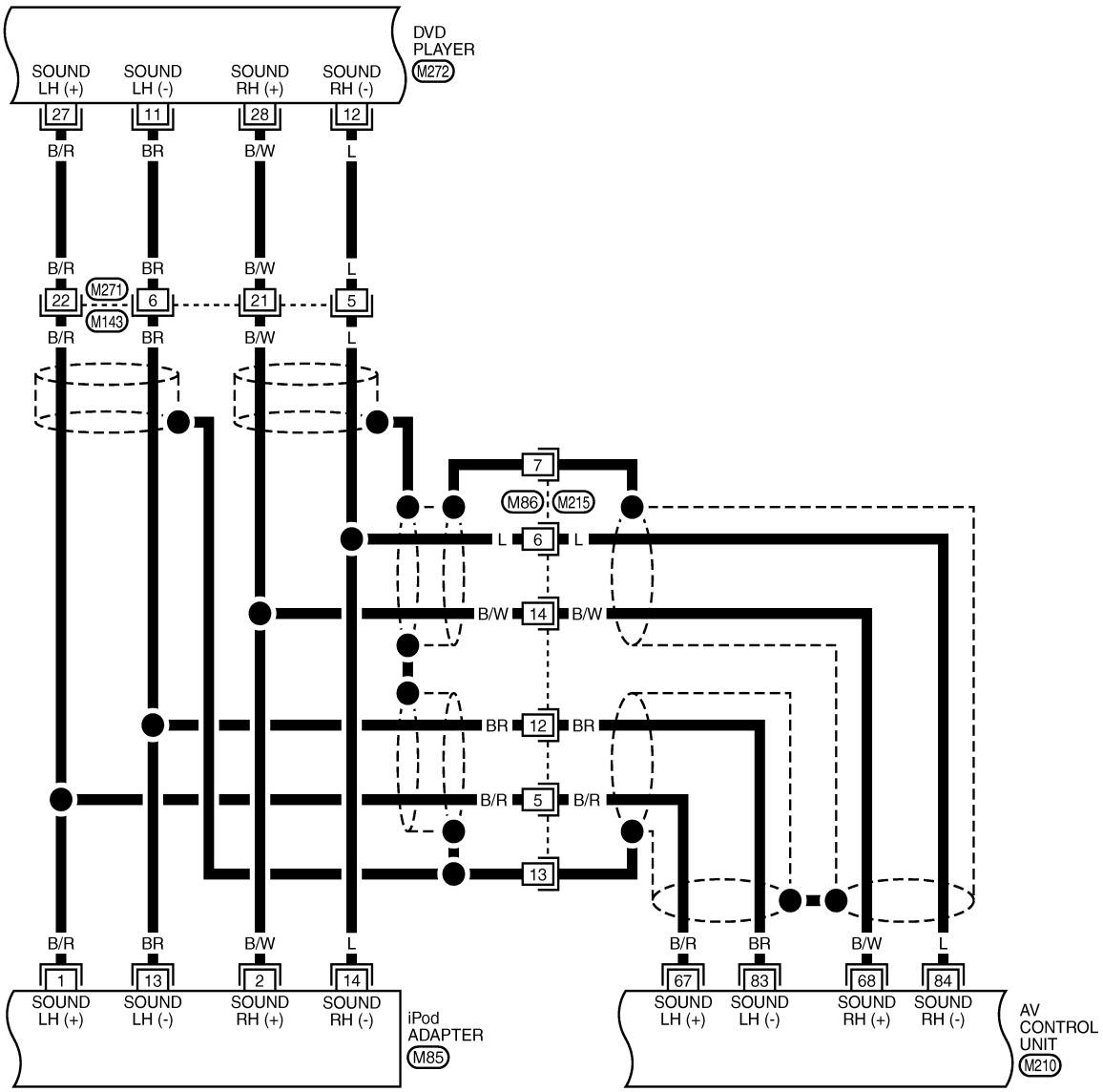


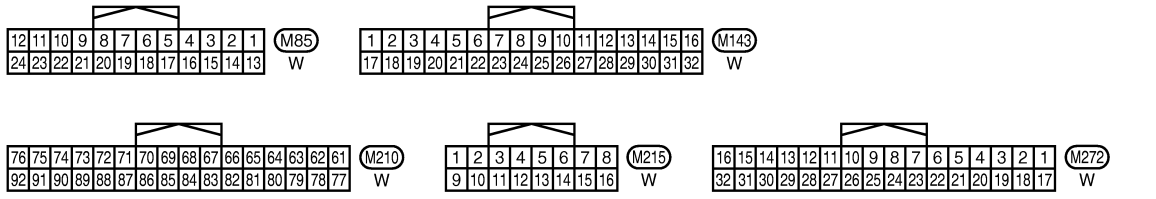




TKWT6761E

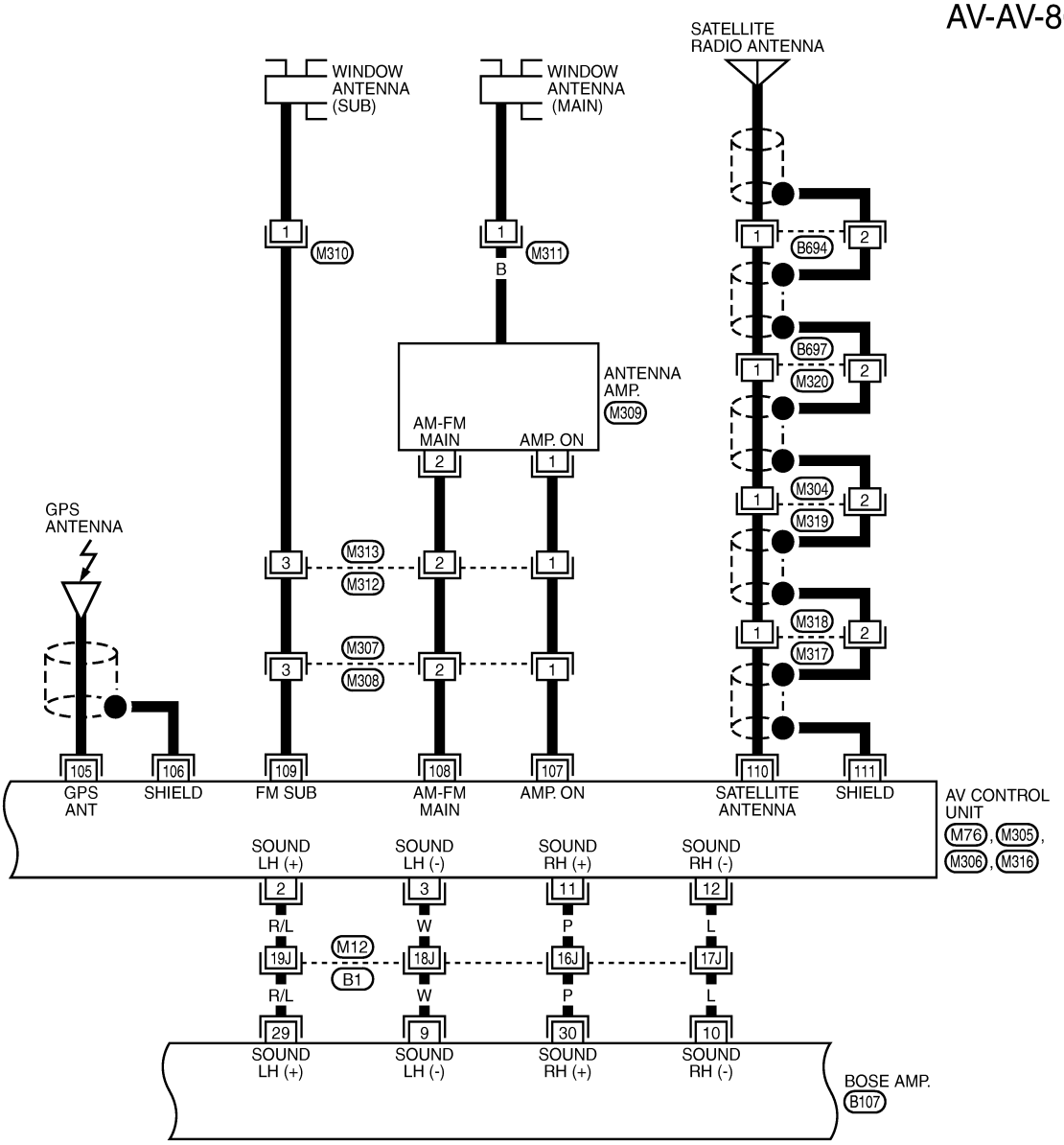
AV-AV-79

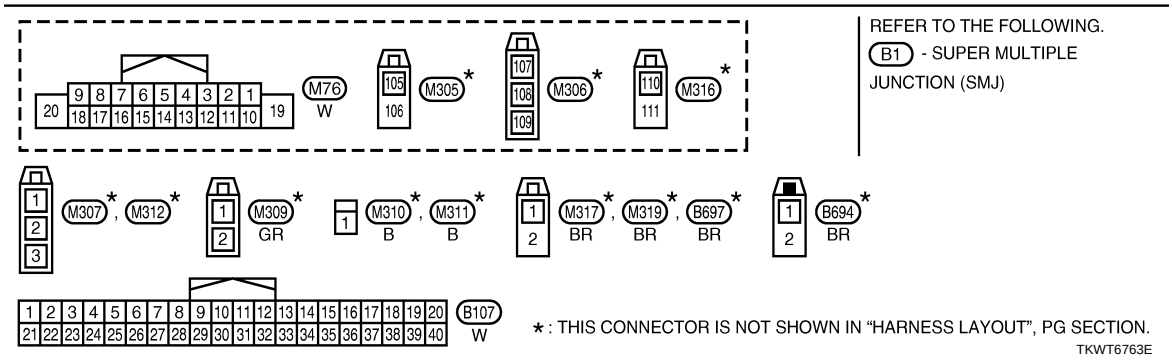




TKWT6762E

AV-AV-80



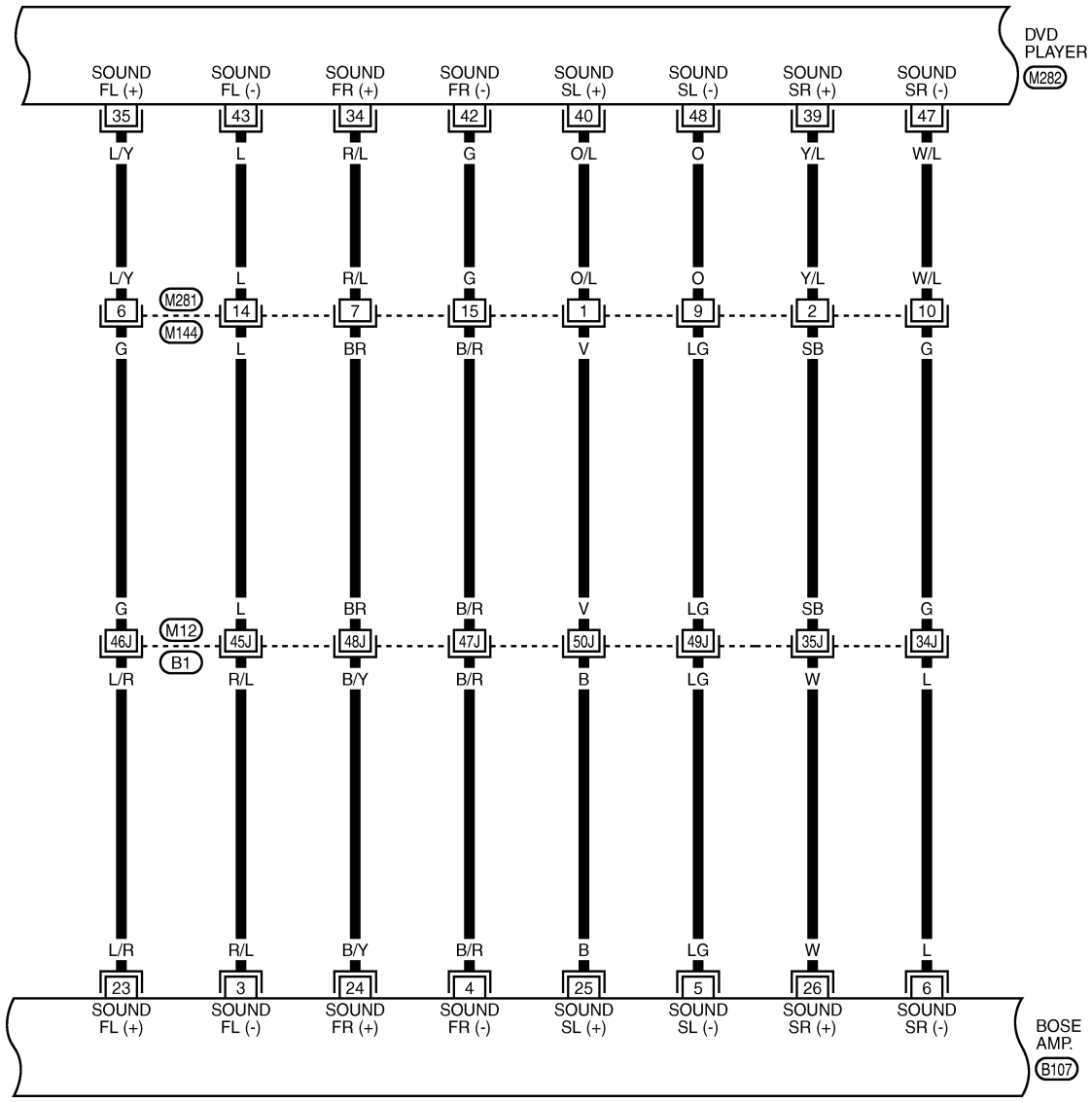


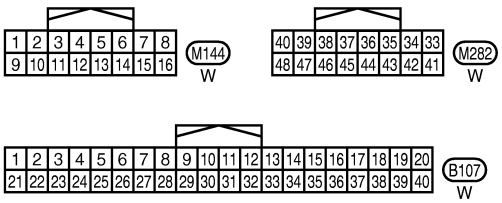
REFER TO THE FOLLOWING.
(B1) - SUPER MULTIPLE JUNCTION (SMJ)

*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6763E

AV-AV-81

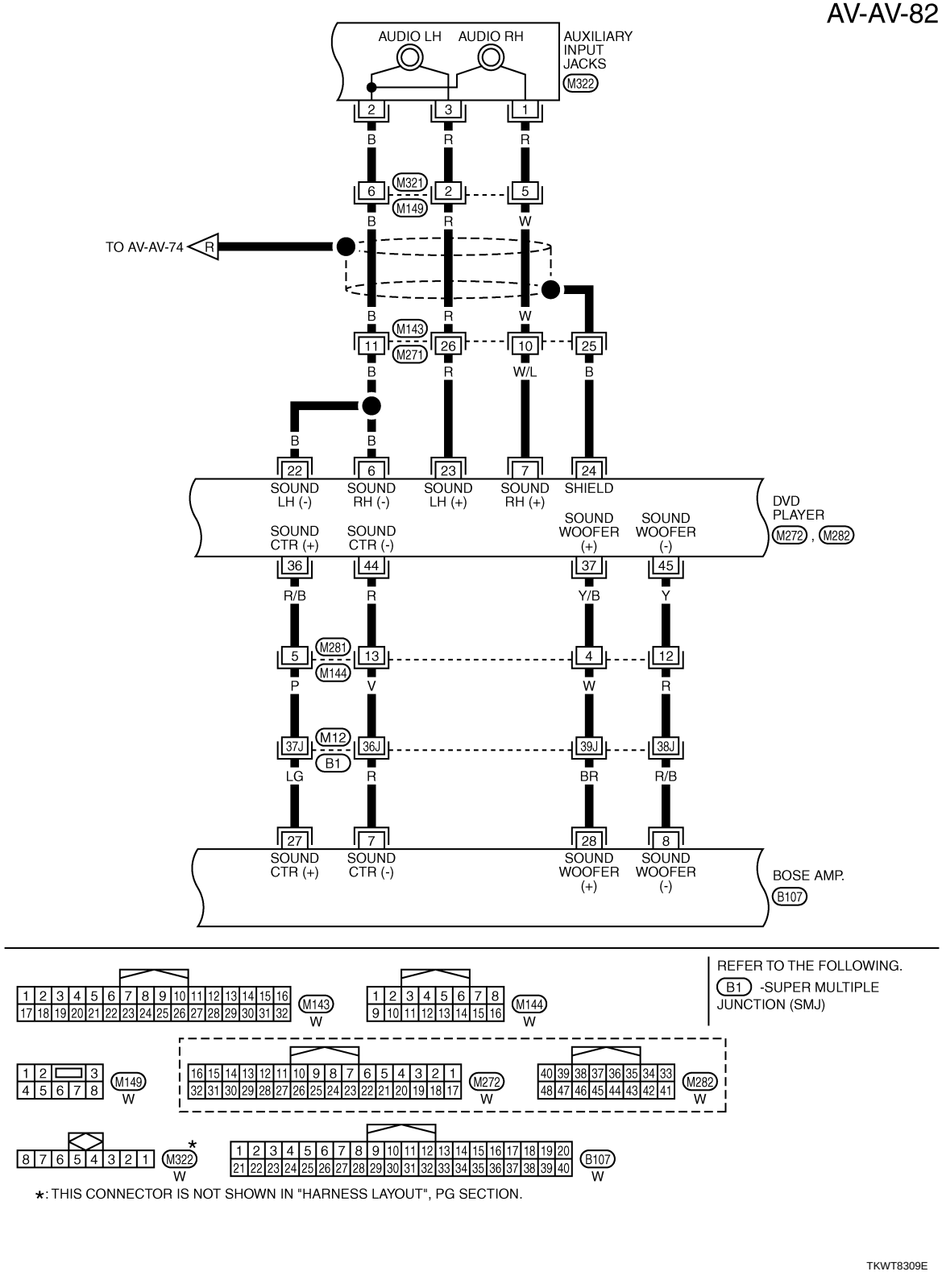




REFER TO THE FOLLOWING.
(B1) - SUPER MULTIPLE JUNCTION (SMJ)

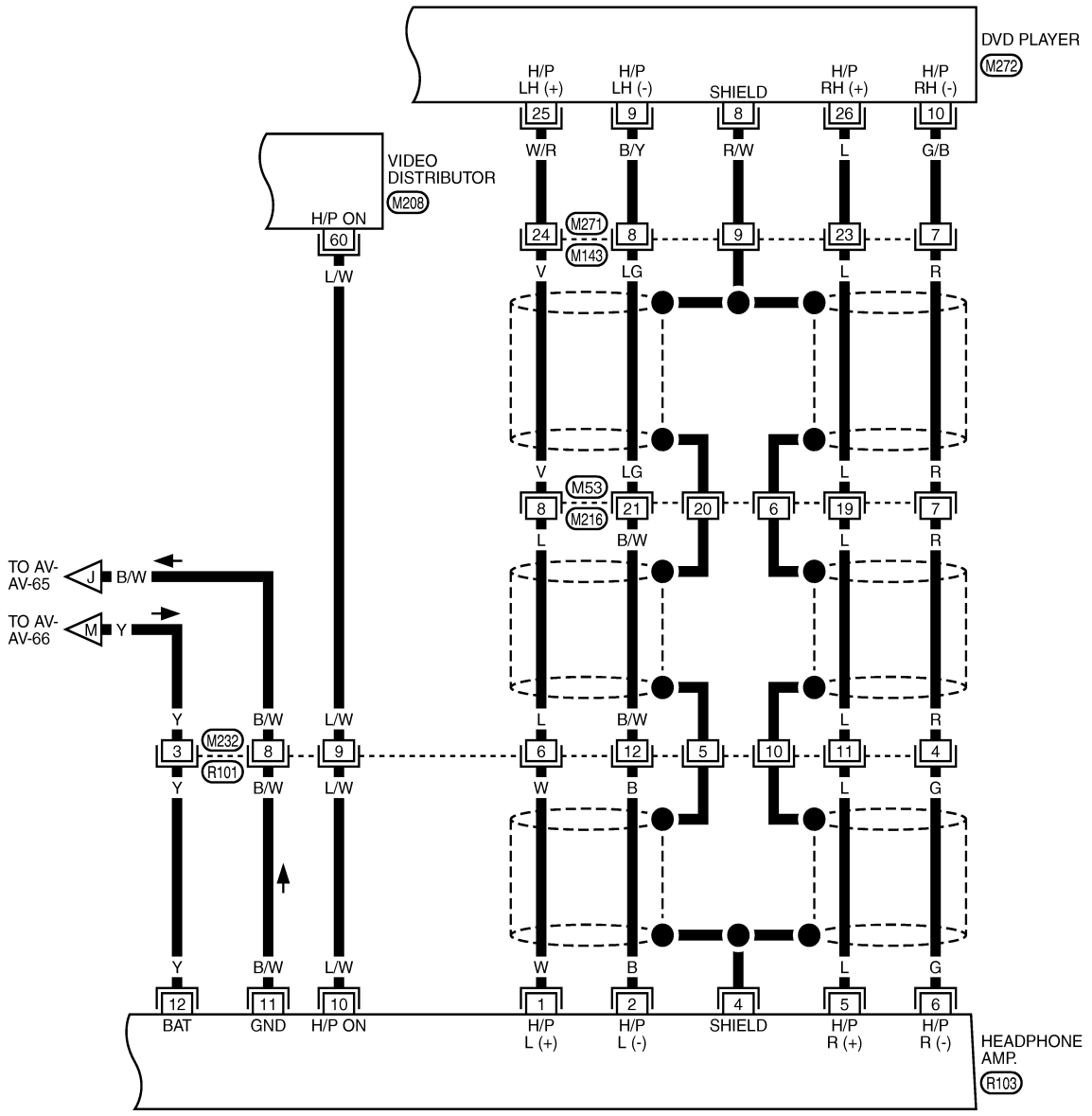
TKWT6764E

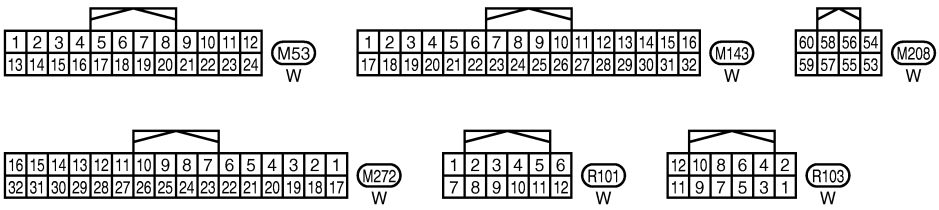
AV-AV-82



TKWT8309E

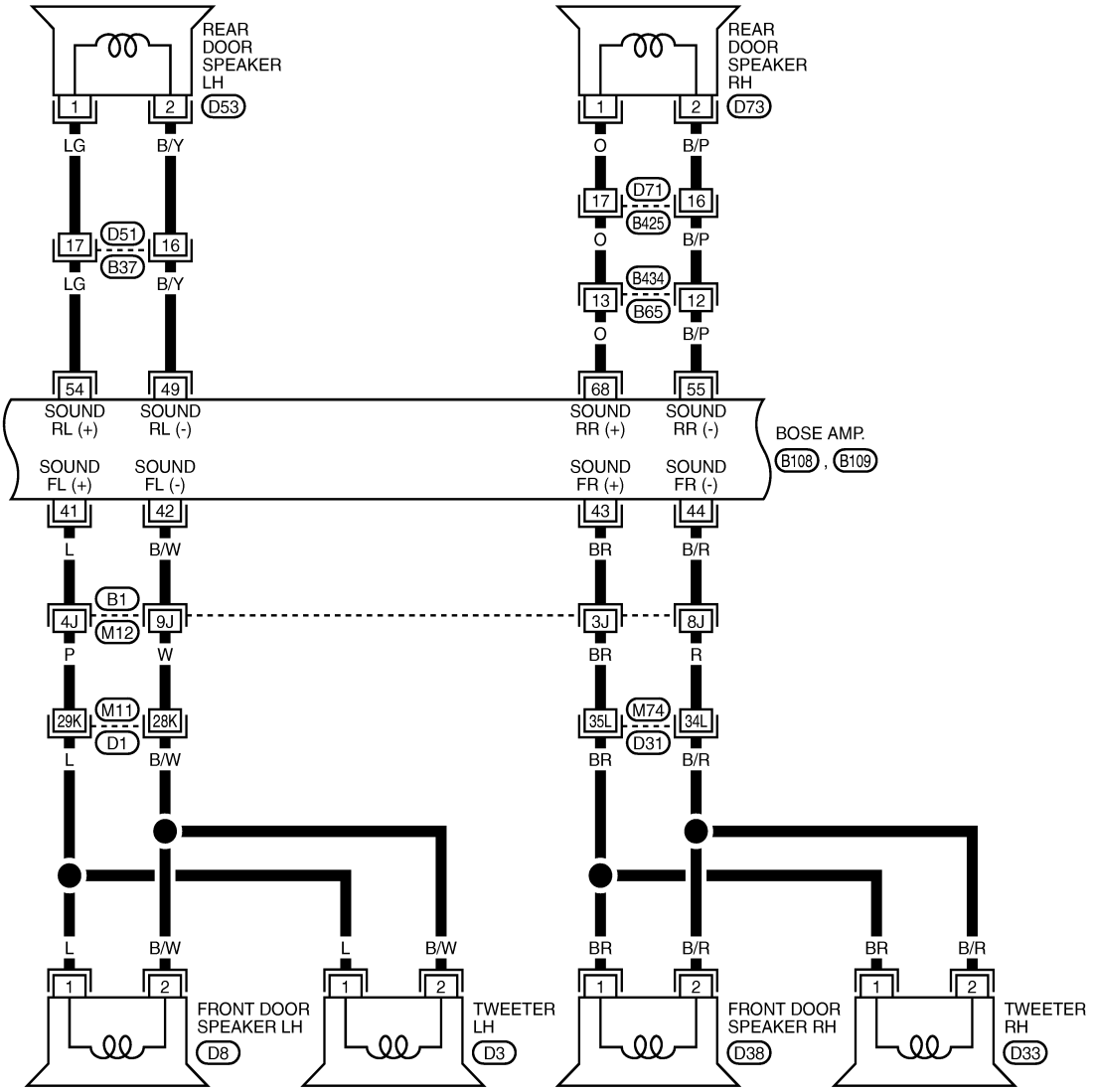
AV-AV-83

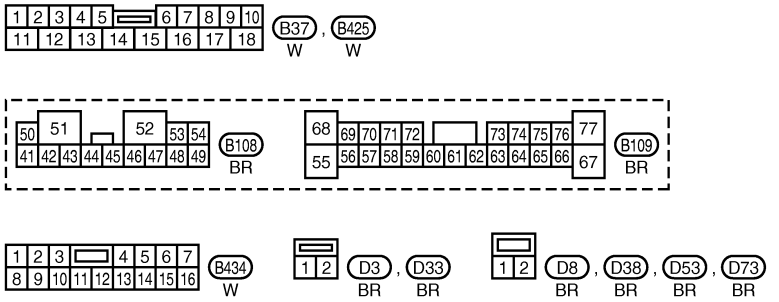




TKWT6766E

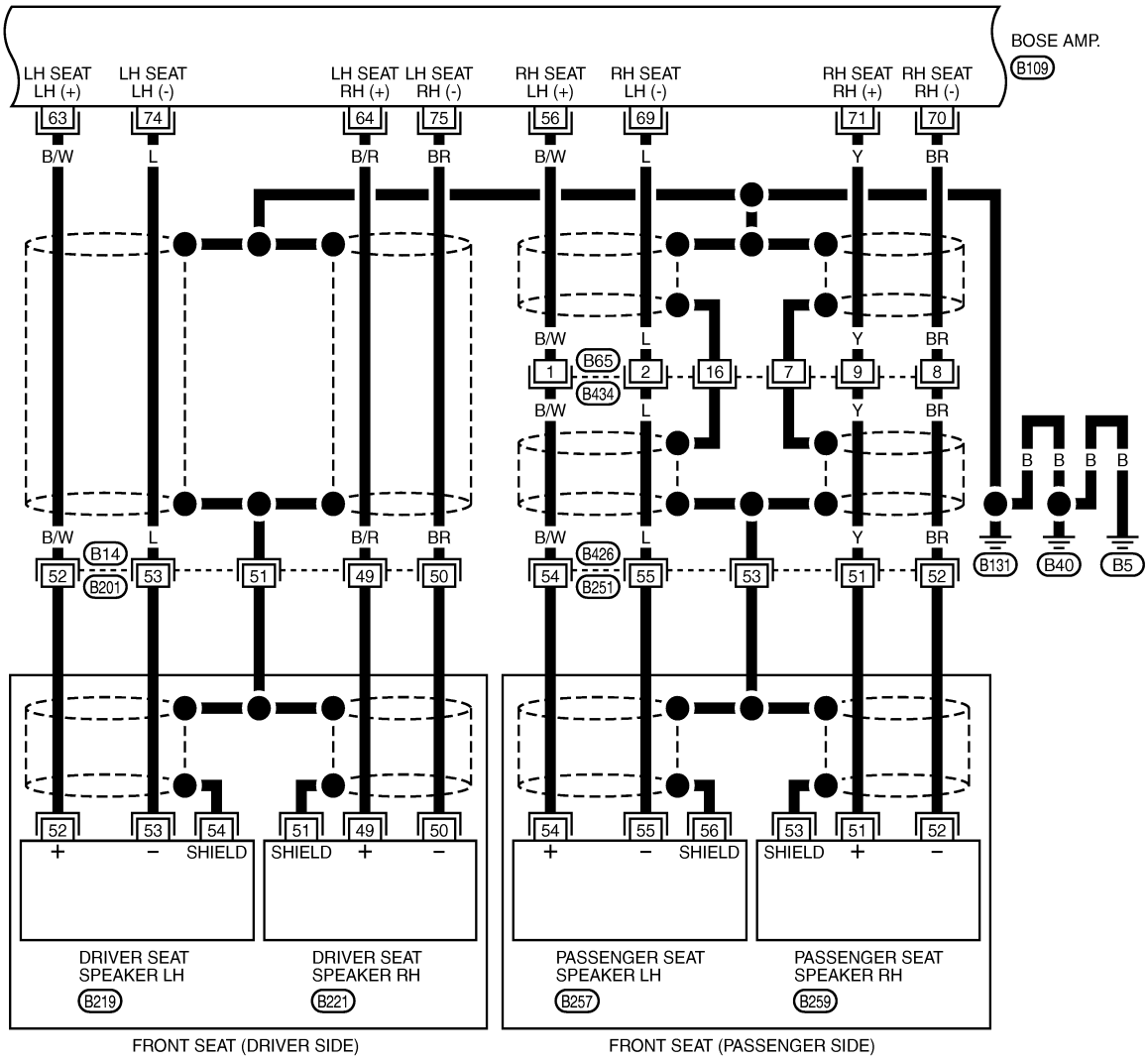
AV-AV-84

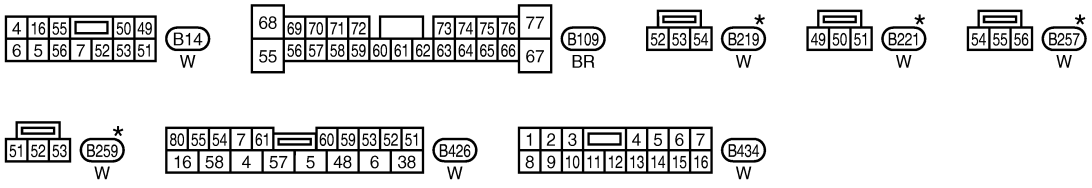




REFER TO THE FOLLOWING.
B1 , D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

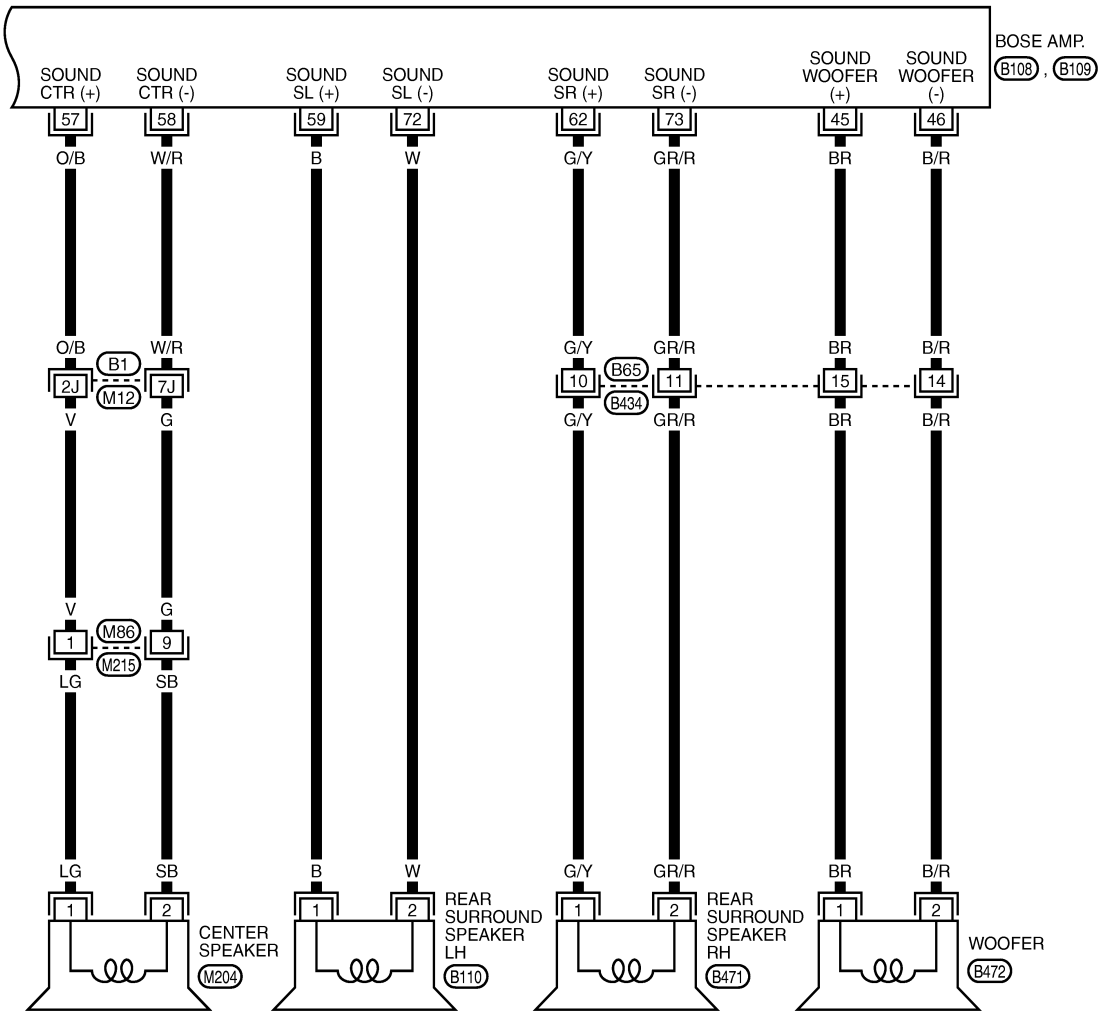
TKWT6767E

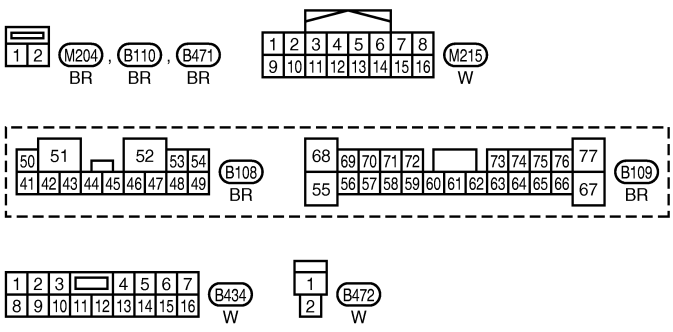




*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

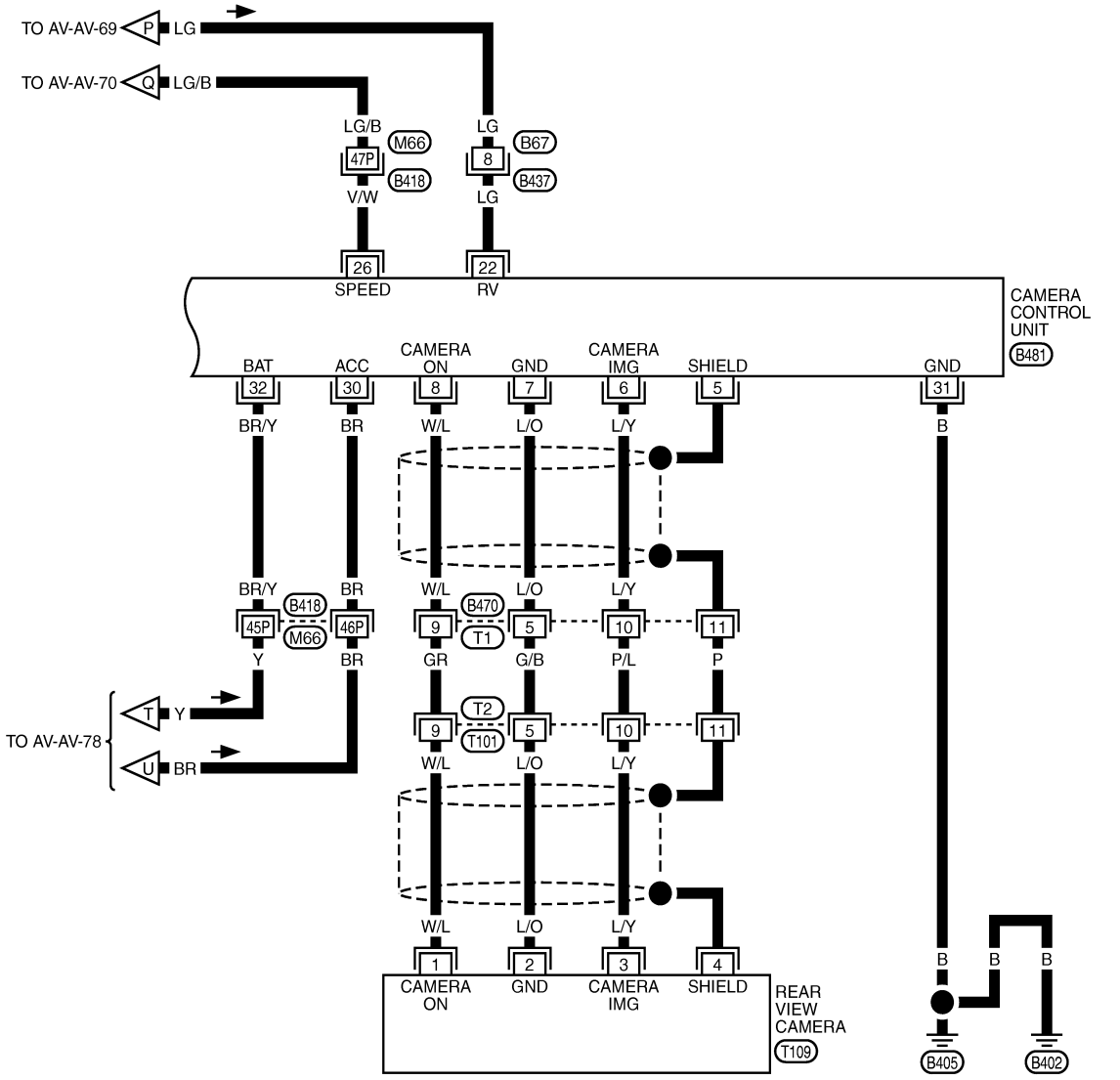
TKWT6768E

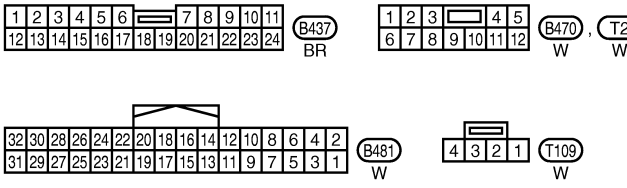




REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6769E





REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

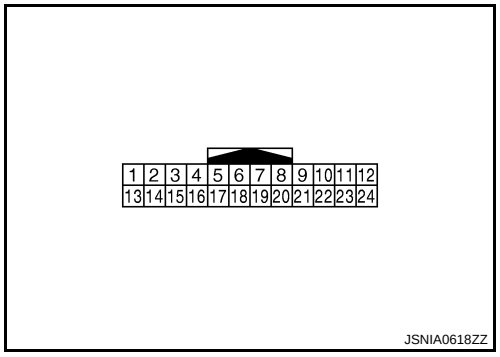
TKWT6770E

IPOD ADAPTER

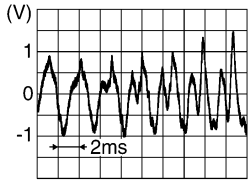
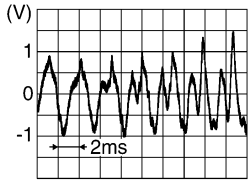
Reference Value

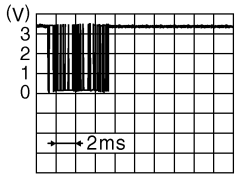
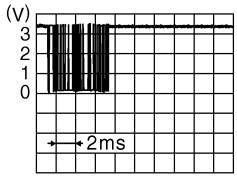
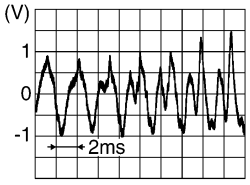
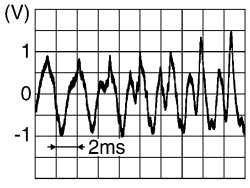
INFOID:0000000004156096

TERMINAL LAYOUT



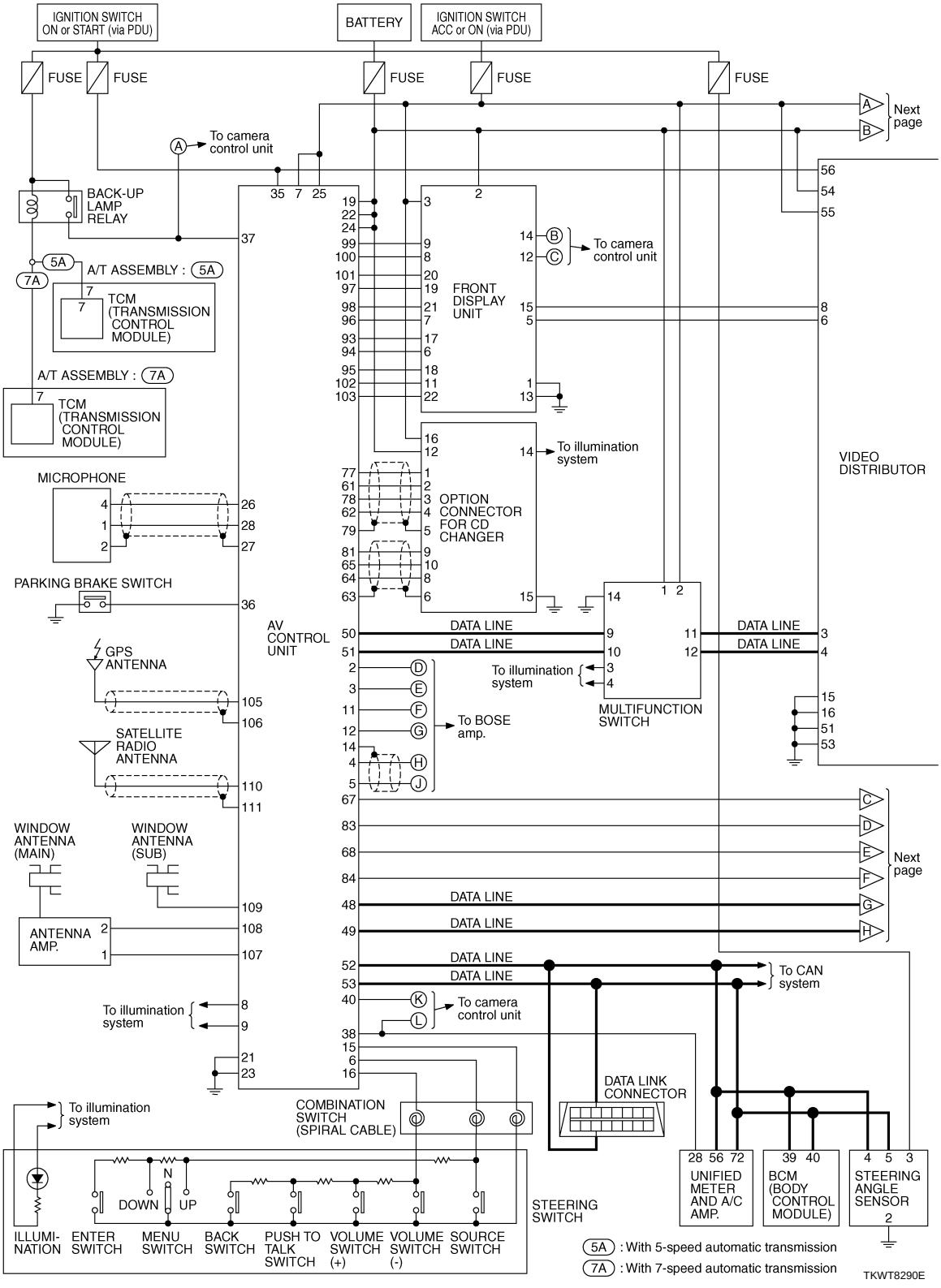
PHYSICAL VALUES

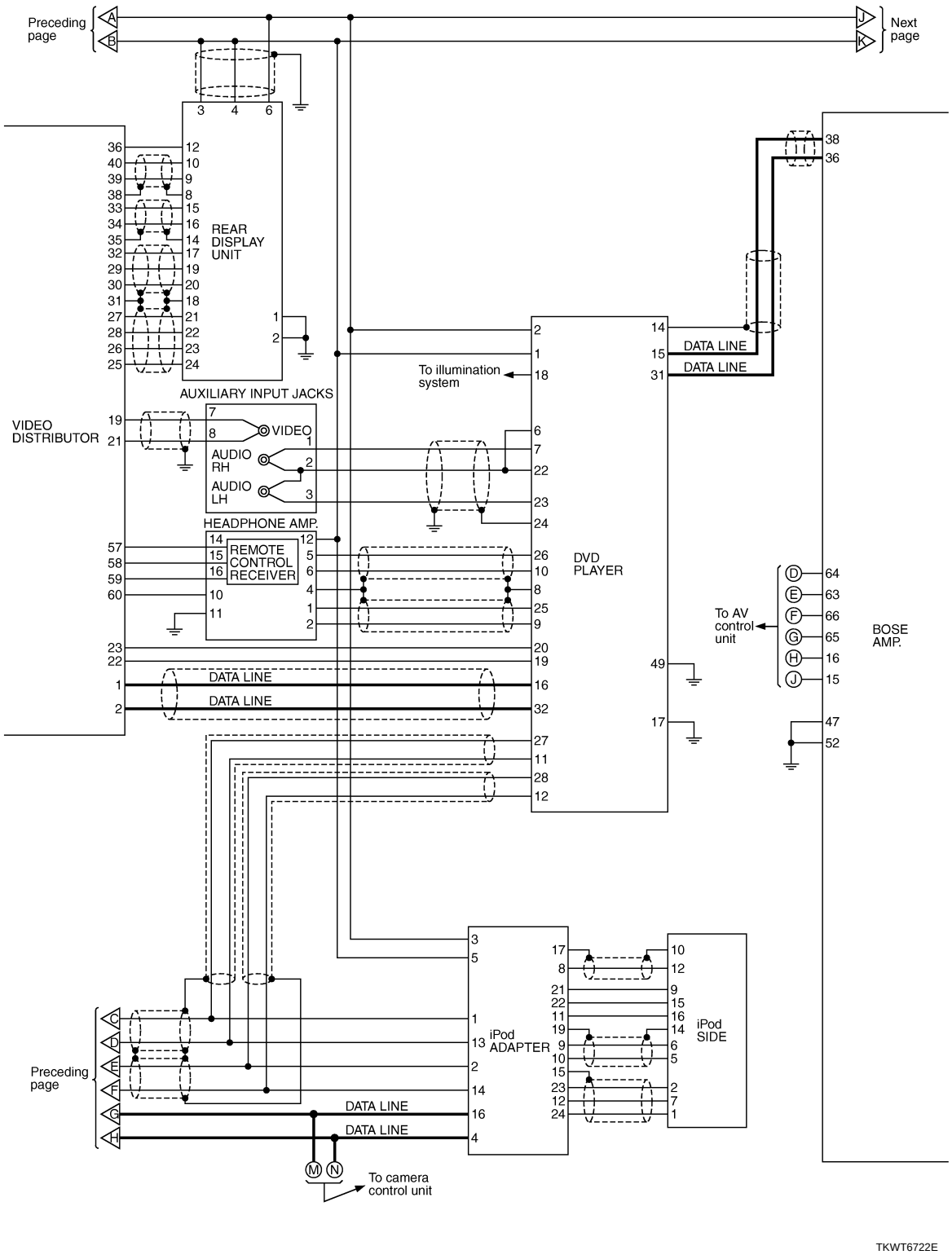
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B/R)	13 (BR)	iPod sound signal LH	Output	Ignition switch ON	Connect and play iPod®.	
2 (B/W)	14 (L)	iPod sound signal RH	Output	Ignition switch ON	Connect and play iPod®.	
3 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
4 (B)	—	AV communication signal (L)	Input/ Output	—	—	—
5 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
8 (W)	Ground	iPod battery charge	Output	Ignition switch ON	Connected to iPod®.	12 V

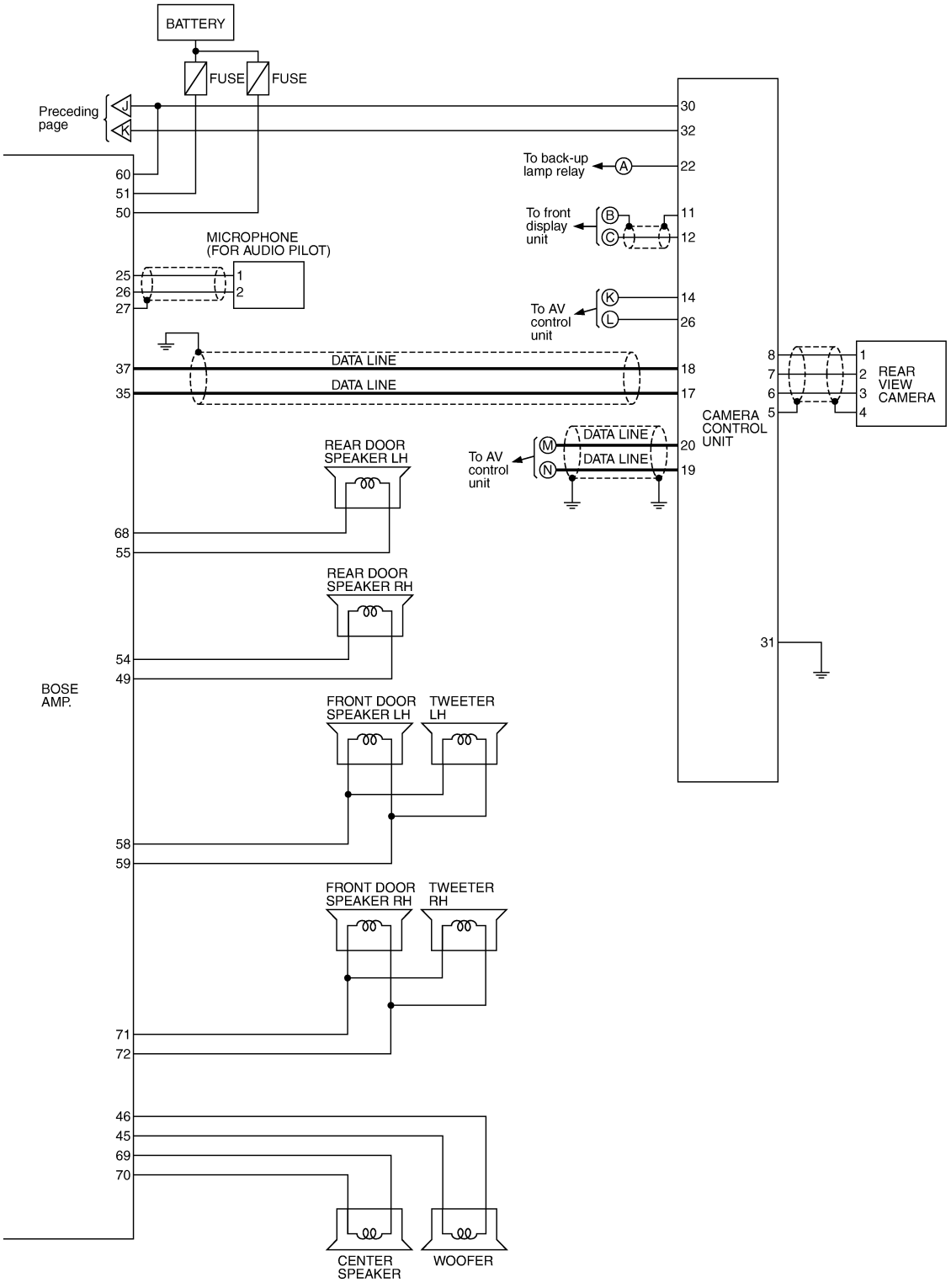
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
9 (V)	Ground	Communication signal (iPod adapter→iPod®)	Output	Ignition switch ON	The wave pattern is displayed just after iPod connection.	**NOTE:** After the wave pattern display, the value continues Approx 3.3 V  JPNIA0462GB
10 (LG)	Ground	Communication signal (iPod®→iPod adapter)	Input	Ignition switch ON	Connected to iPod®.	 JPNIA0462GB
11 (L)	Ground	ACCESSORY-IDENTIFY	—	Ignition switch ON	Connected to iPod®.	0 V
12 (R)	23 (B)	iPod sound signal RH	Input	Ignition switch ON	Connect and play iPod®.	 SKIB3609E
15	—	Shield	—	—	—	—
16 (W)	—	AV communication signal (H)	Input/ Output	—	—	—
17	Ground	Ground	—	Ignition switch ON	—	0 V
19	—	Shield	—	—	—	—
21 (SB)	Ground	iPod connection recognition signal	Input	Ignition switch ON	Not connected to iPod®.	4 V
					Connected to iPod®.	0 V
22 (W)	Ground	ACCESSORY-DETECT	—	Ignition switch ON	Connected to iPod®.	0 V
24 (W)	23 (B)	iPod sound signal LH	Input	Ignition switch ON	Connect and play iPod®.	 SKIB3609E

Schematic - BOSE Audio 2ch System-

INFOID:0000000004391610




Preceding page
A
B
Next page
J
K
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
To illumination system
DVD PLAYER
DATA LINE
DATA LINE
DATA LINE
To AV control unit
BOSE AMP.
iPod ADAPTER
iPod SIDE
DATA LINE
DATA LINE
To camera control unit
Preceding page
TKWT6722E



TKWT6723E

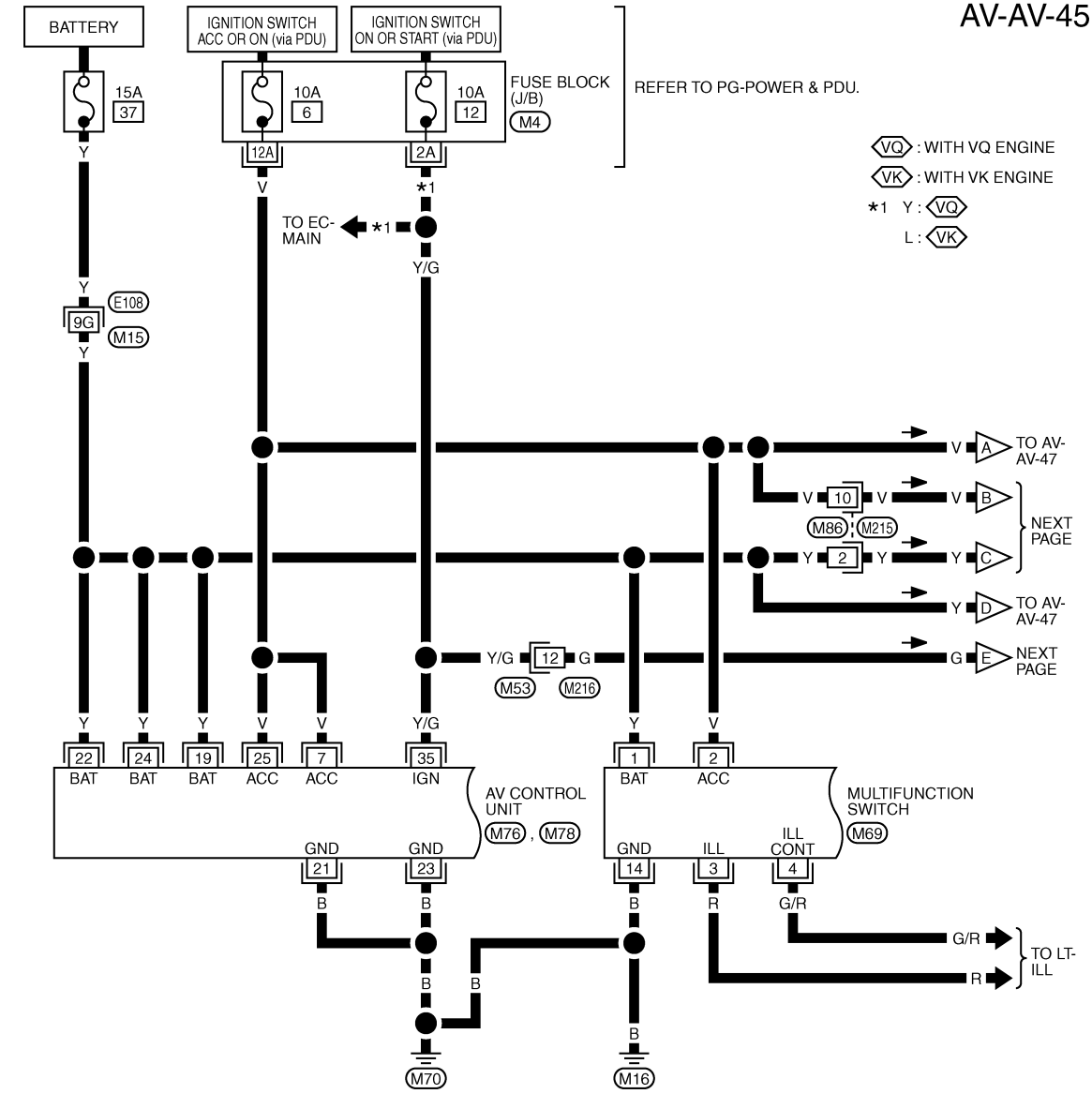
Wiring Diagram - AV - / BOSE Audio 2ch System

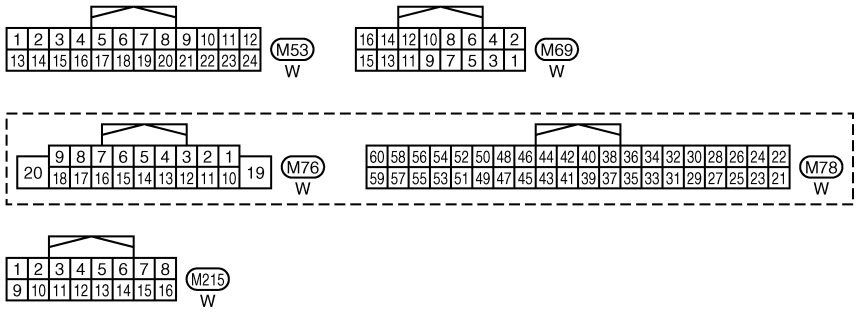
INFOID:0000000004391611

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

AV-AV-45

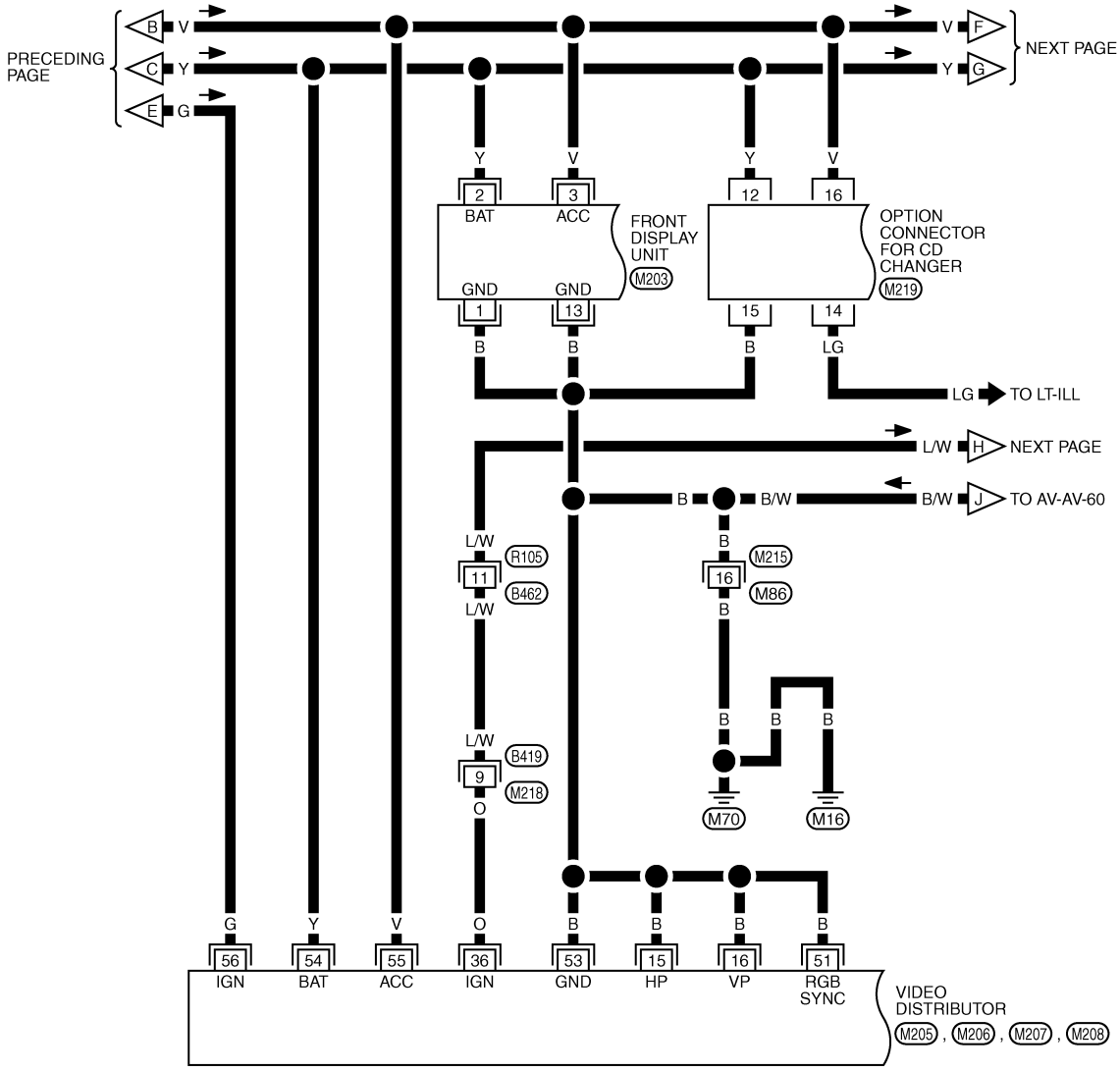


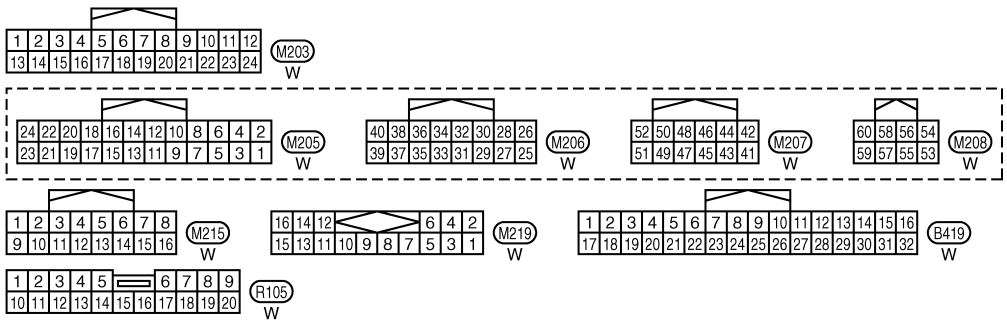


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8291E

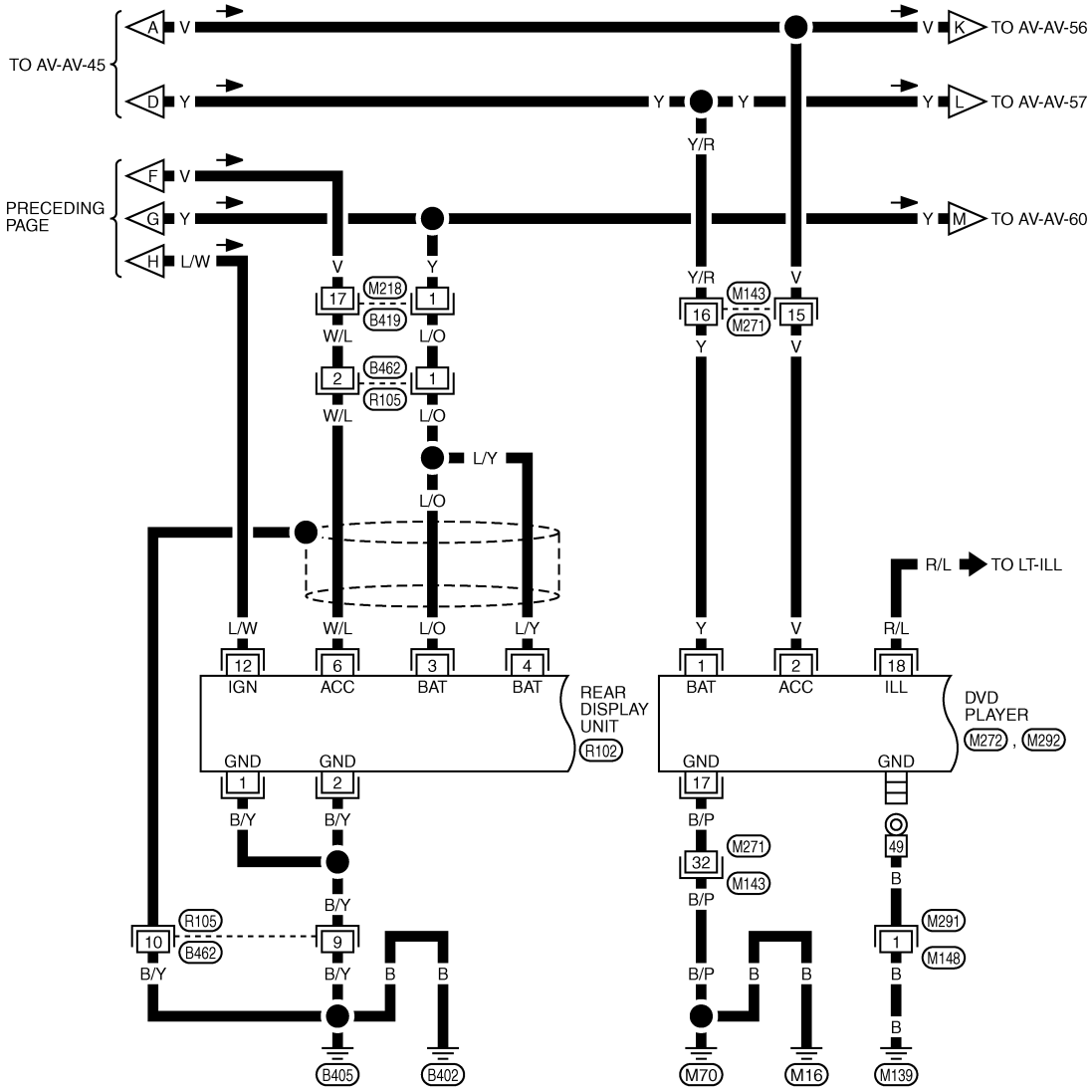
AV-AV-46

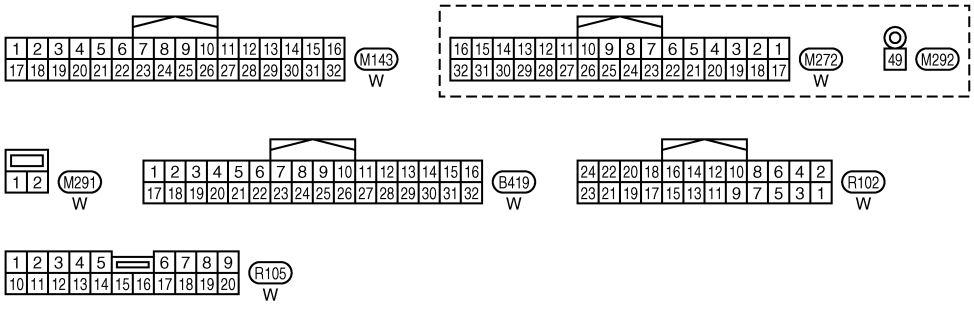




TKWT8292E

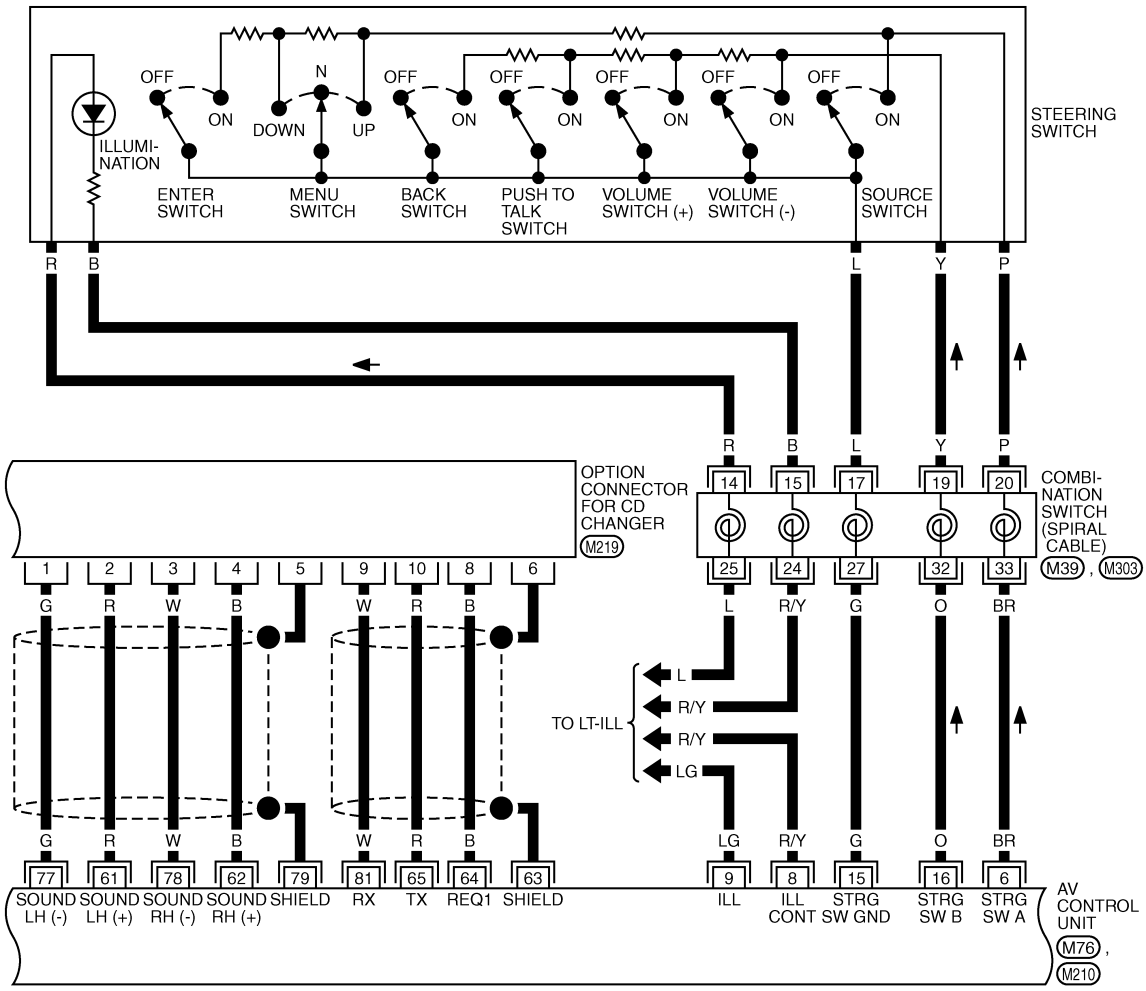
AV-AV-47

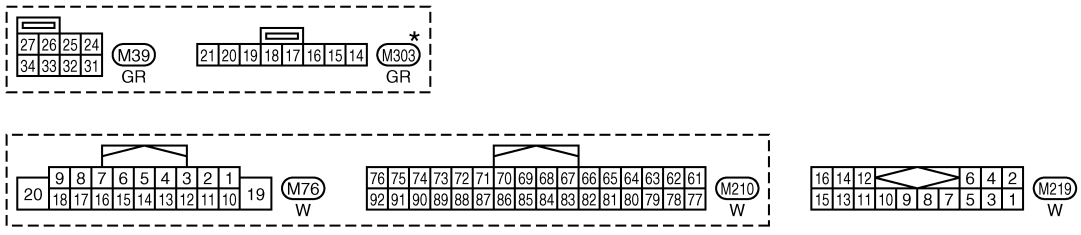




TKWT8293E

AV-AV-48

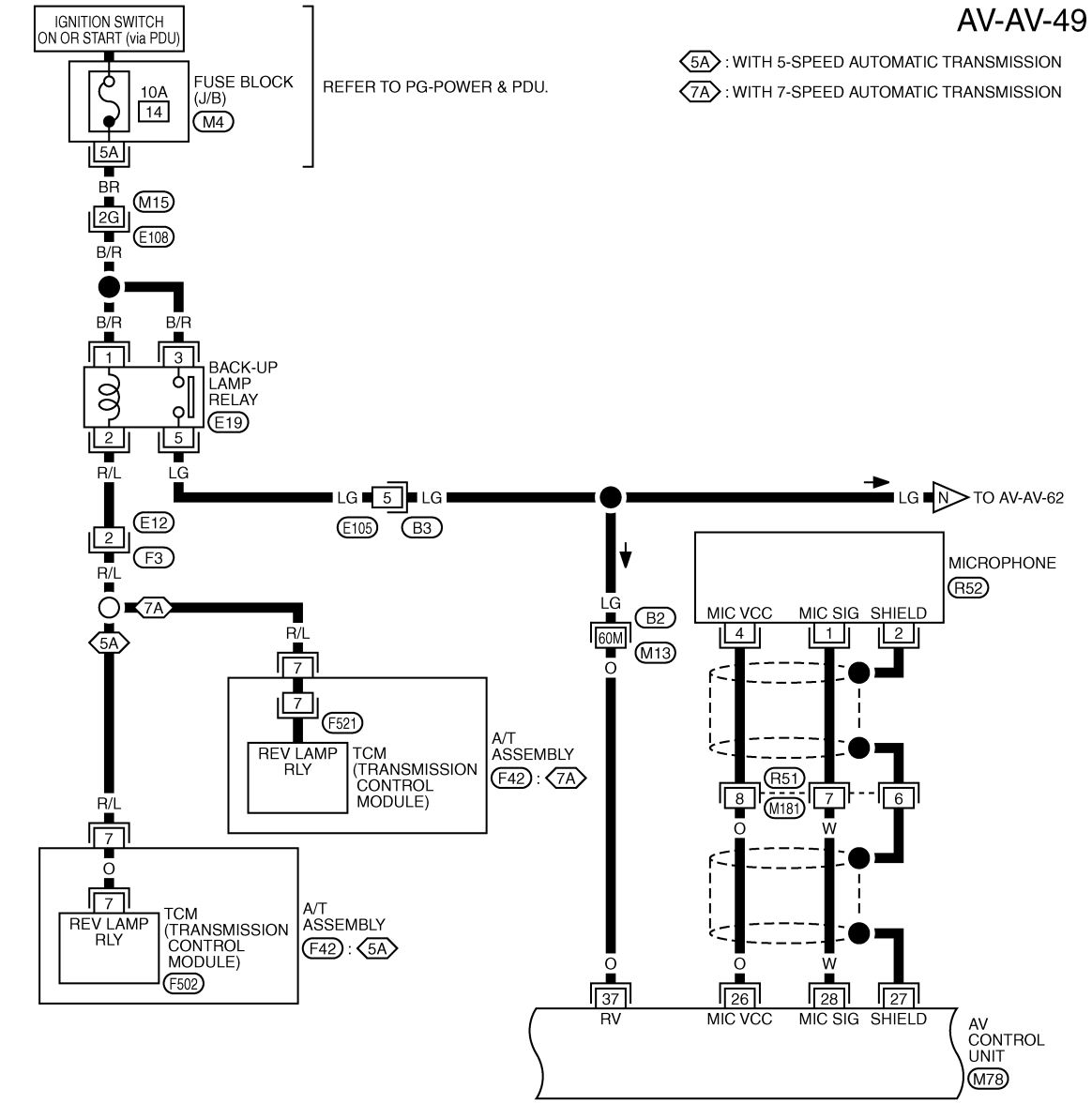


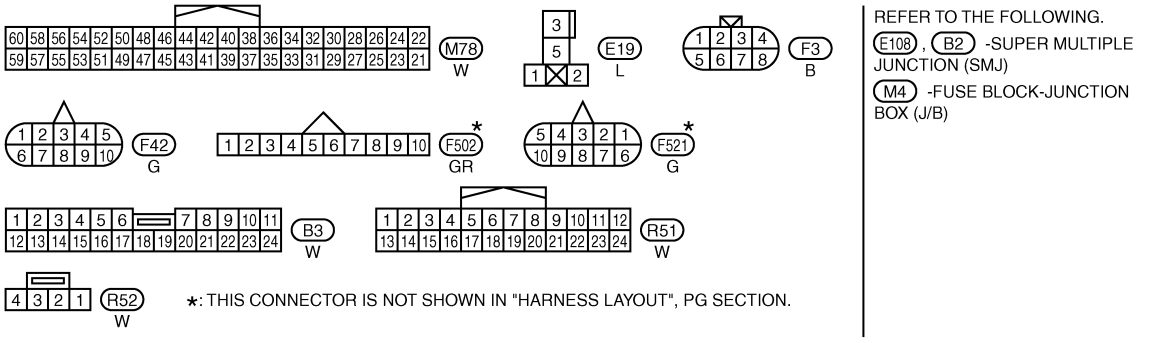


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8294E

AV-AV-49

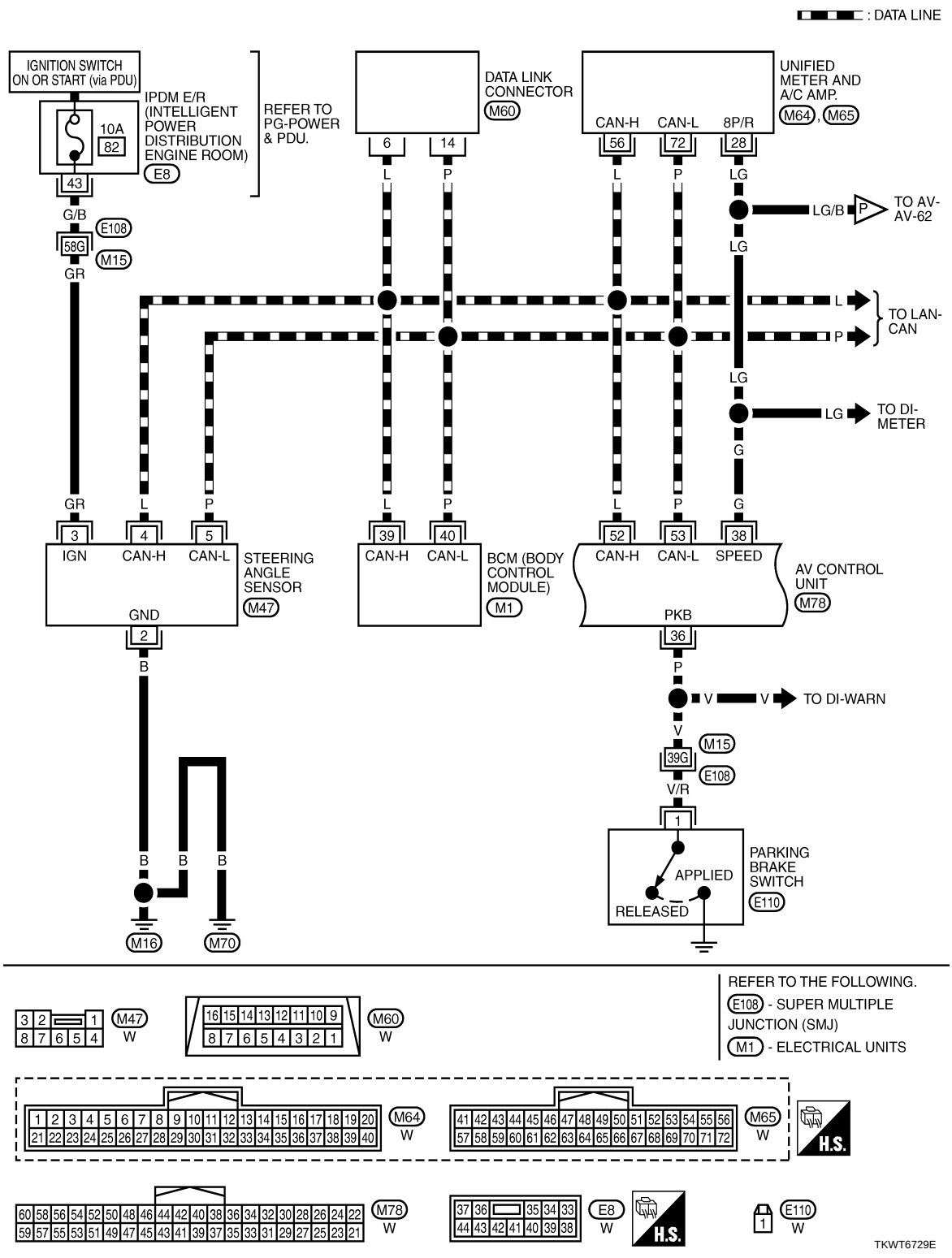




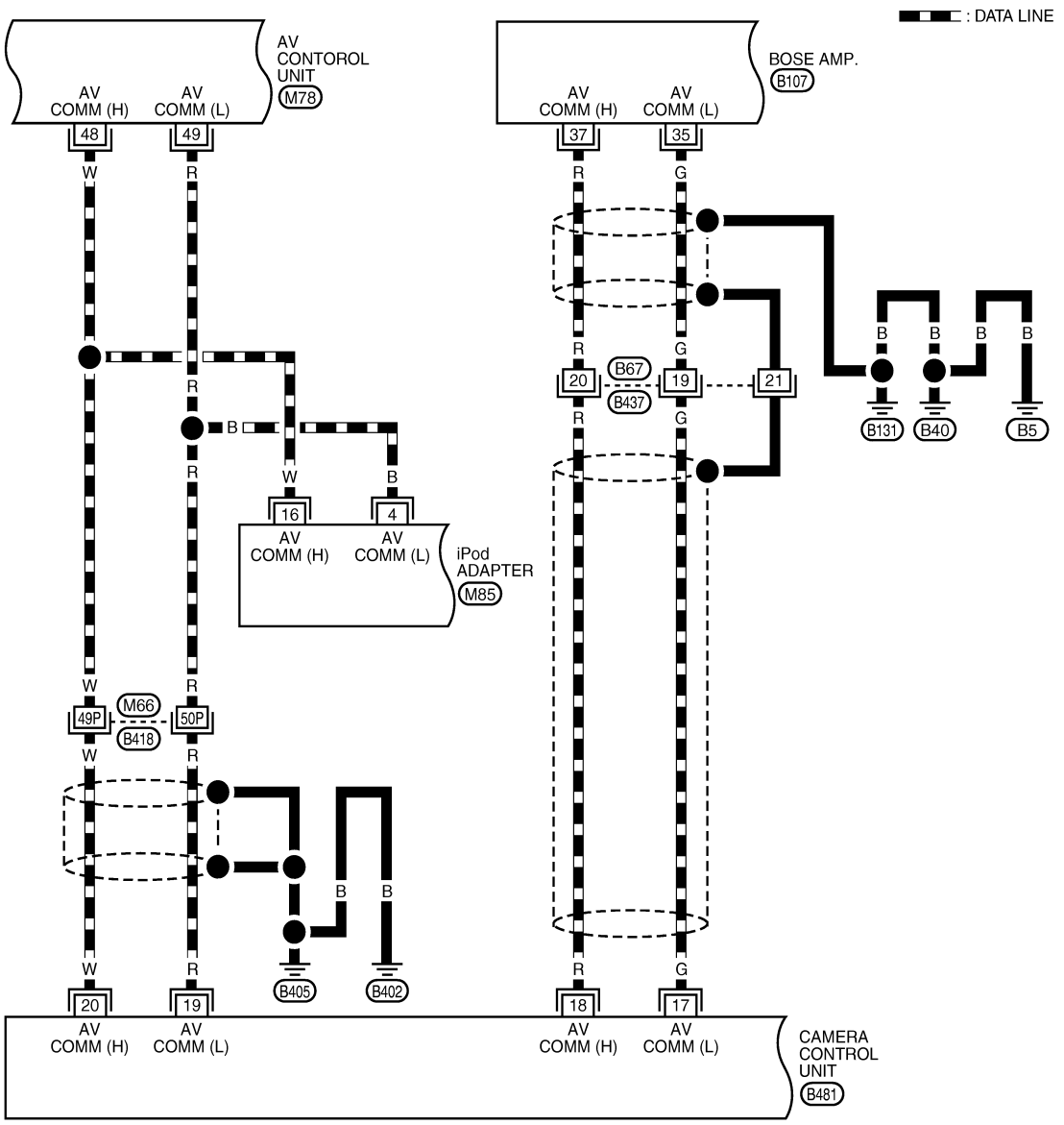
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

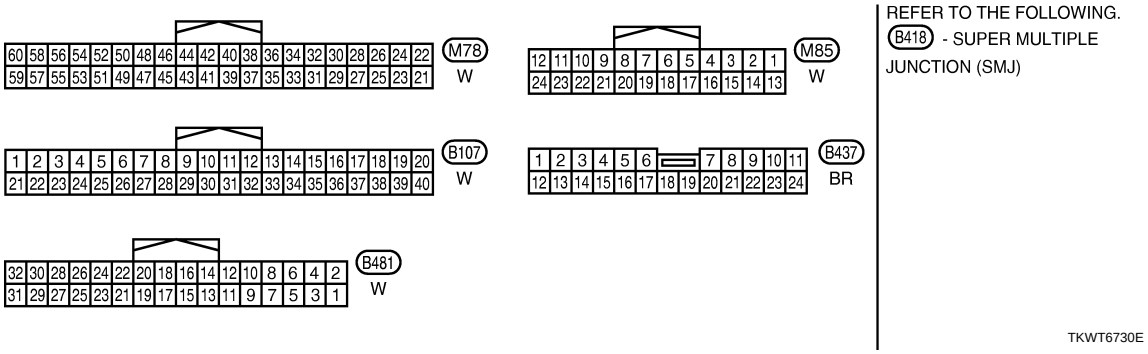
TKWT8295E

AV-AV-50


: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
G/B
E108
58G
M15
GR
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6 14
L P
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56 72 28
L P LG
LG/B P TO AV-AV-62
LG
L TO LAN-CAN
P
LG
LG TO DI-METER
G
GR L P L P L P G
3 4 5 39 40 52 53 38
IGN CAN-H CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
CAN-H CAN-L
BCM (BODY CONTROL MODULE) M1
CAN-H CAN-L SPEED
AV CONTROL UNIT M78
PKB
36
P
V V TO DI-WARN
V
M15
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B B B
M16 M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47 W
M60 W
M64 W
M65 W
H.S.
M78 W
E8 W
E110 W
TKWT6729E

AV-AV-51

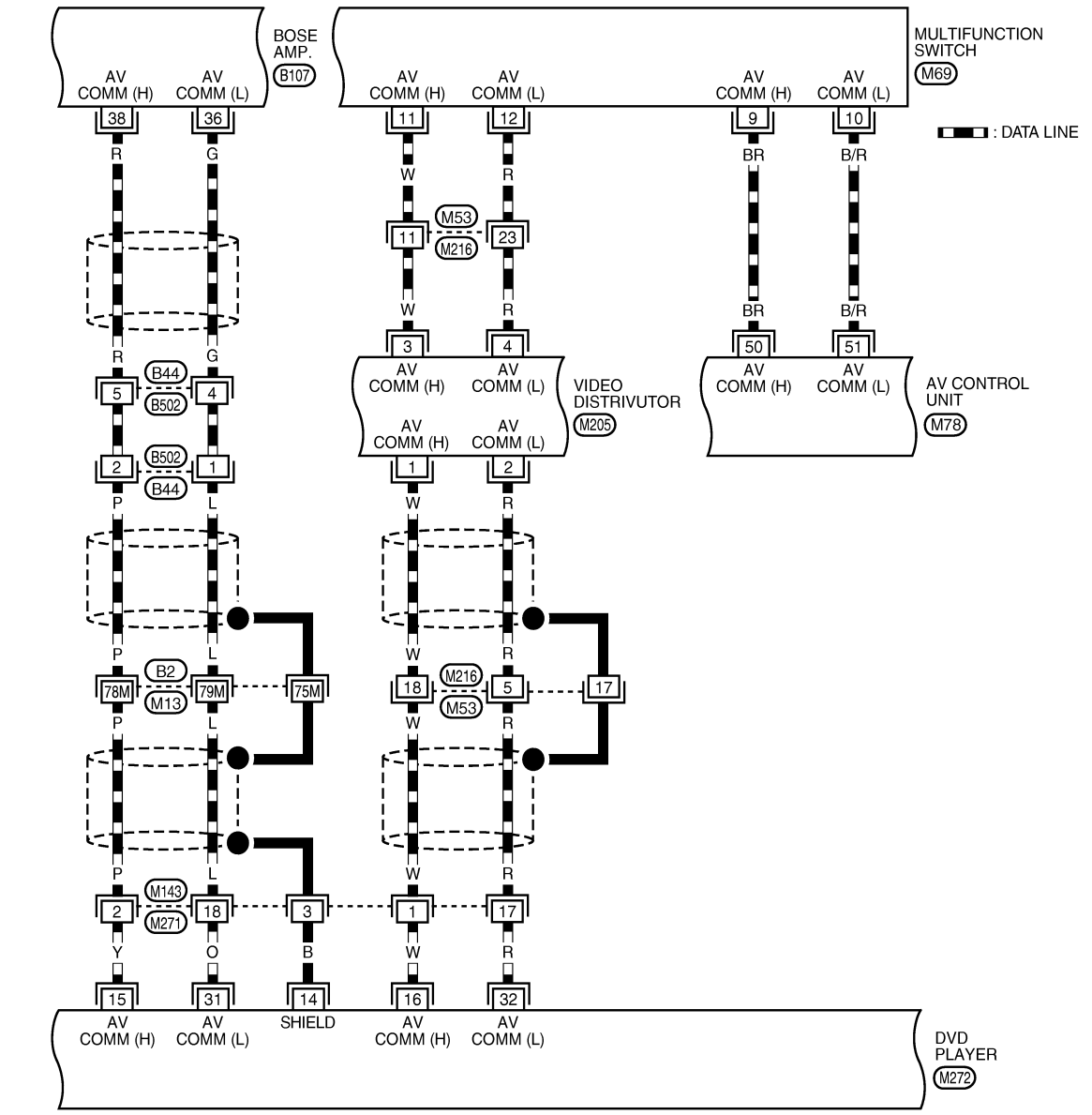


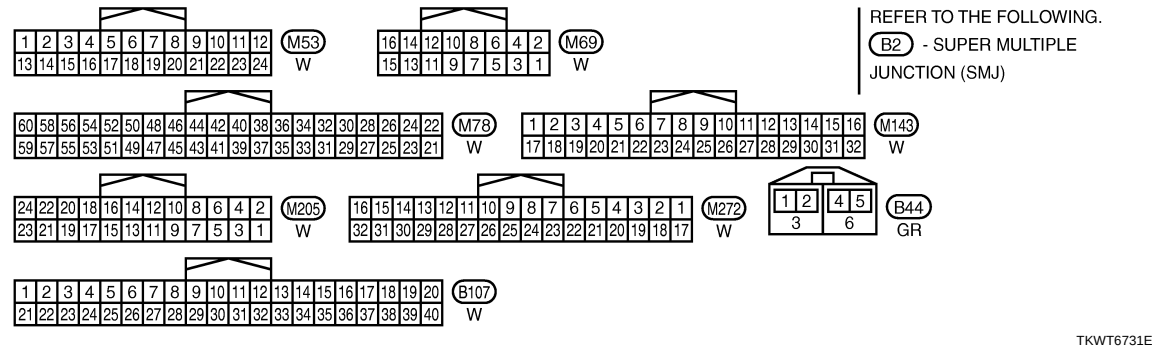


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6730E

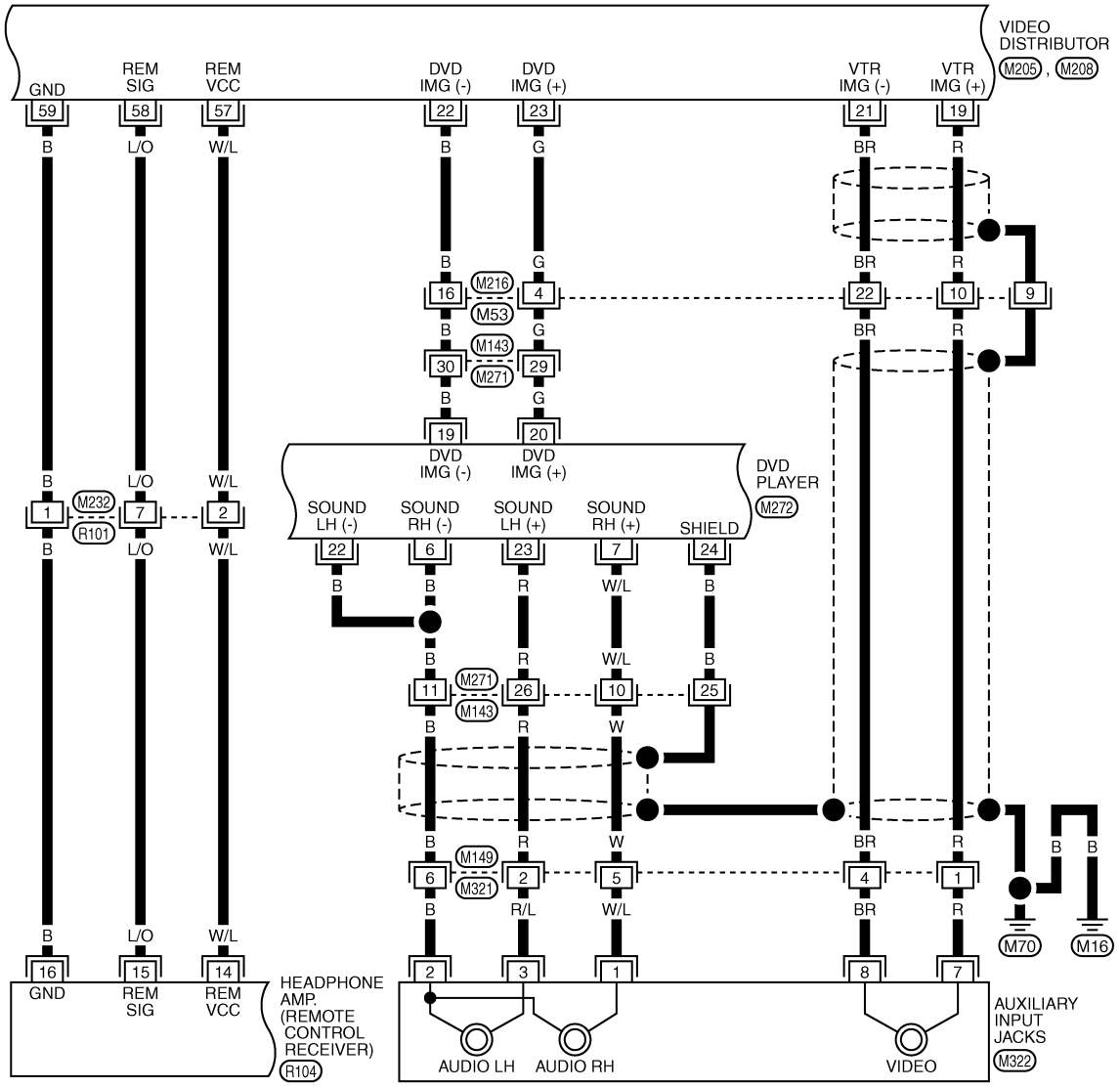
AV-AV-52

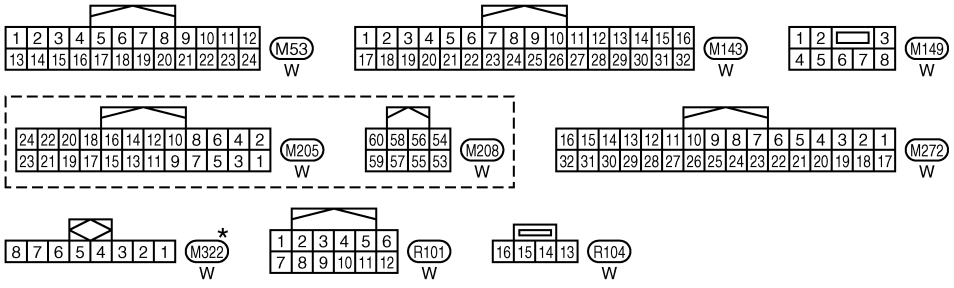




TKWT6731E

AV-AV-53

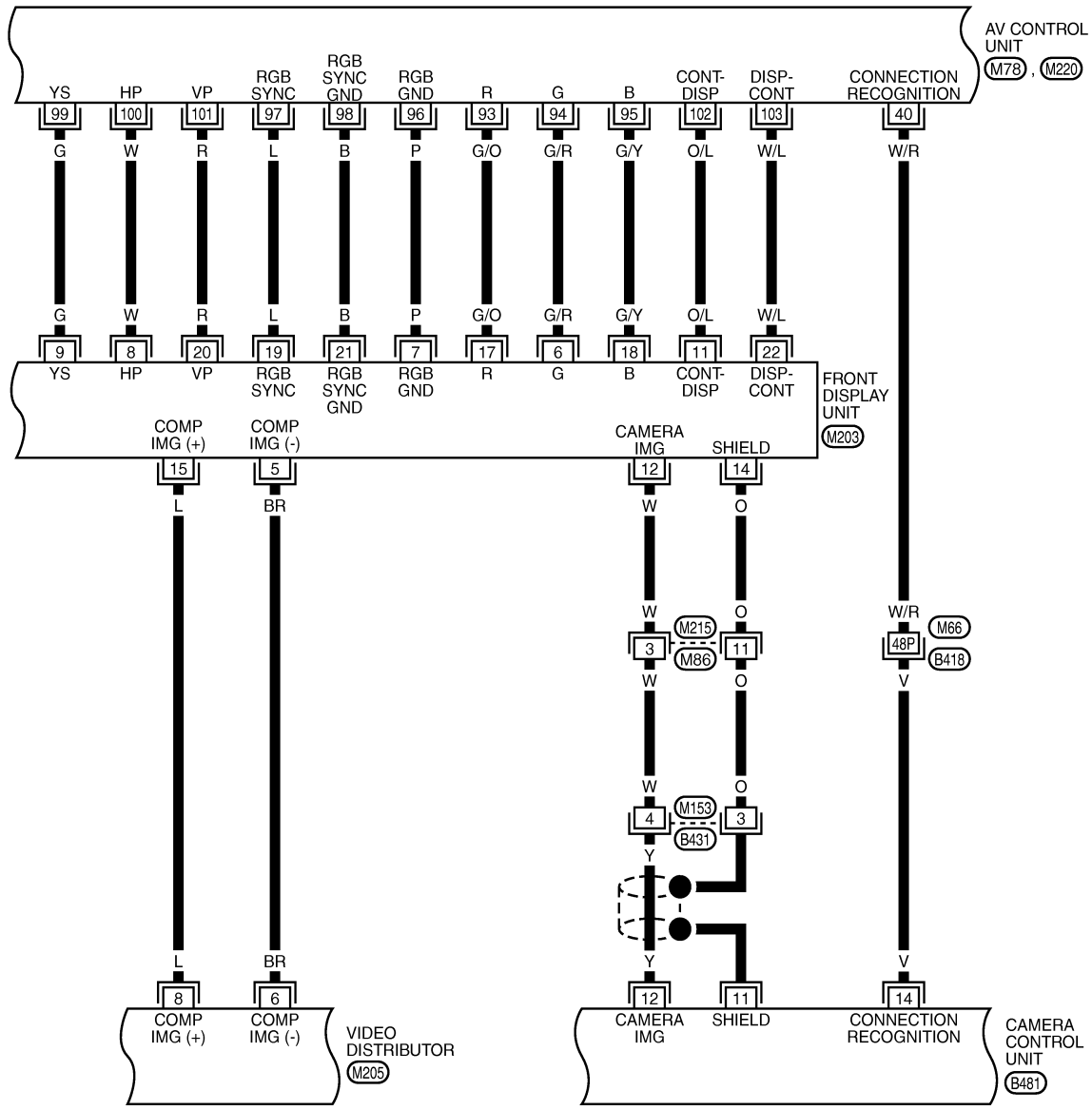


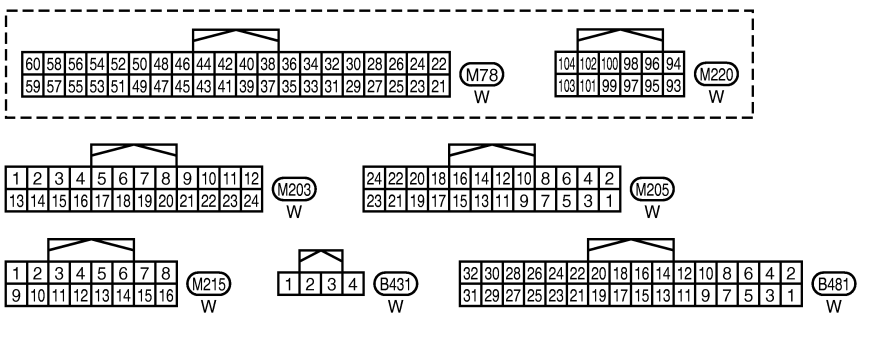


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8296E

AV-AV-54

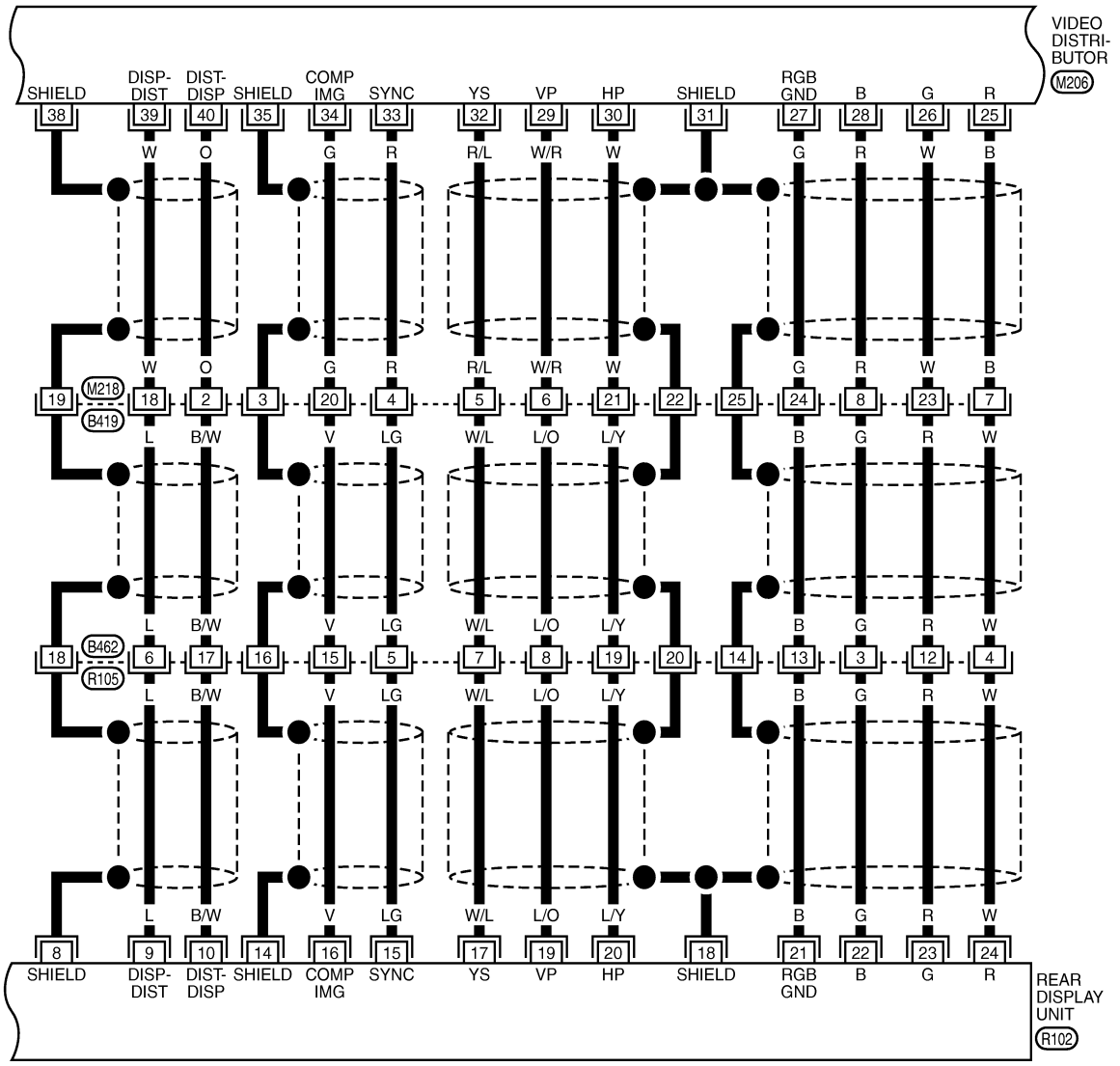


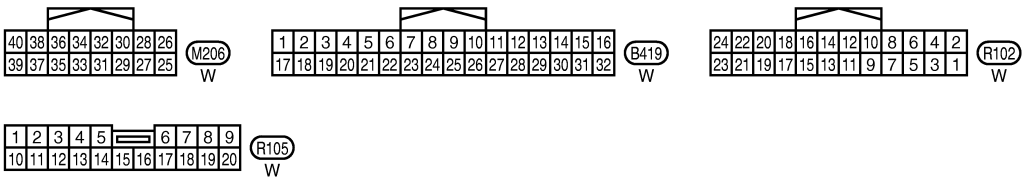


REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT6733E

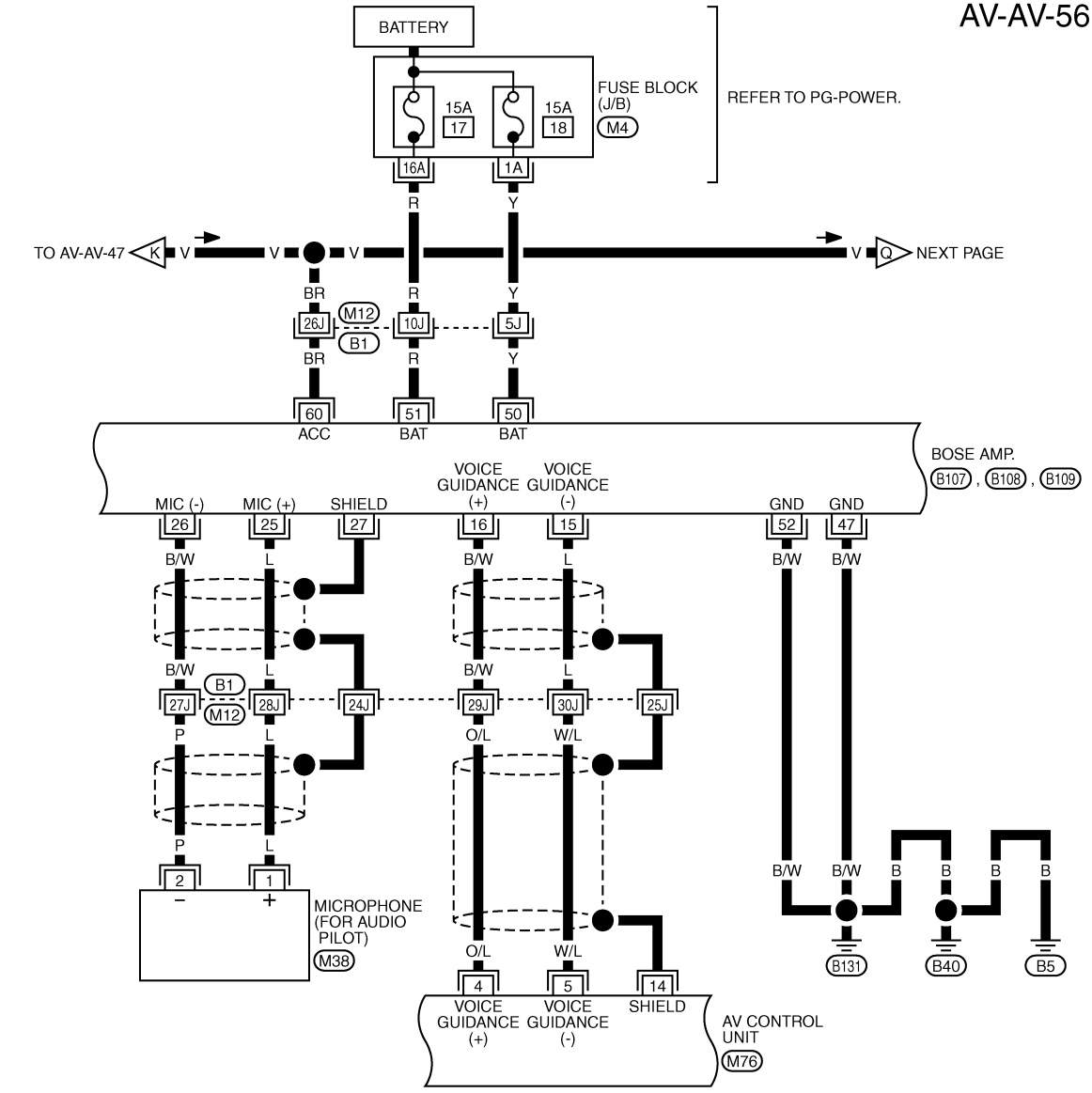
AV-AV-55

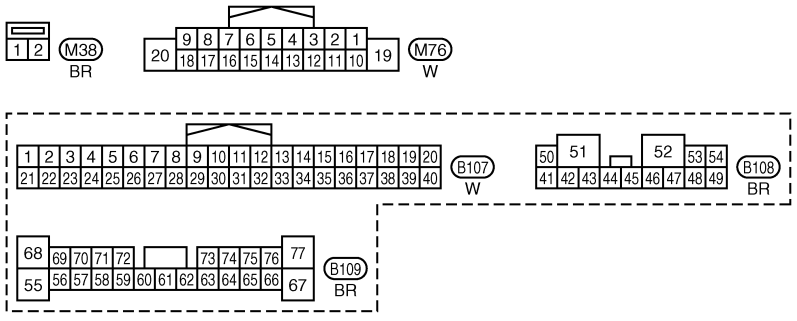




TKWT6734E

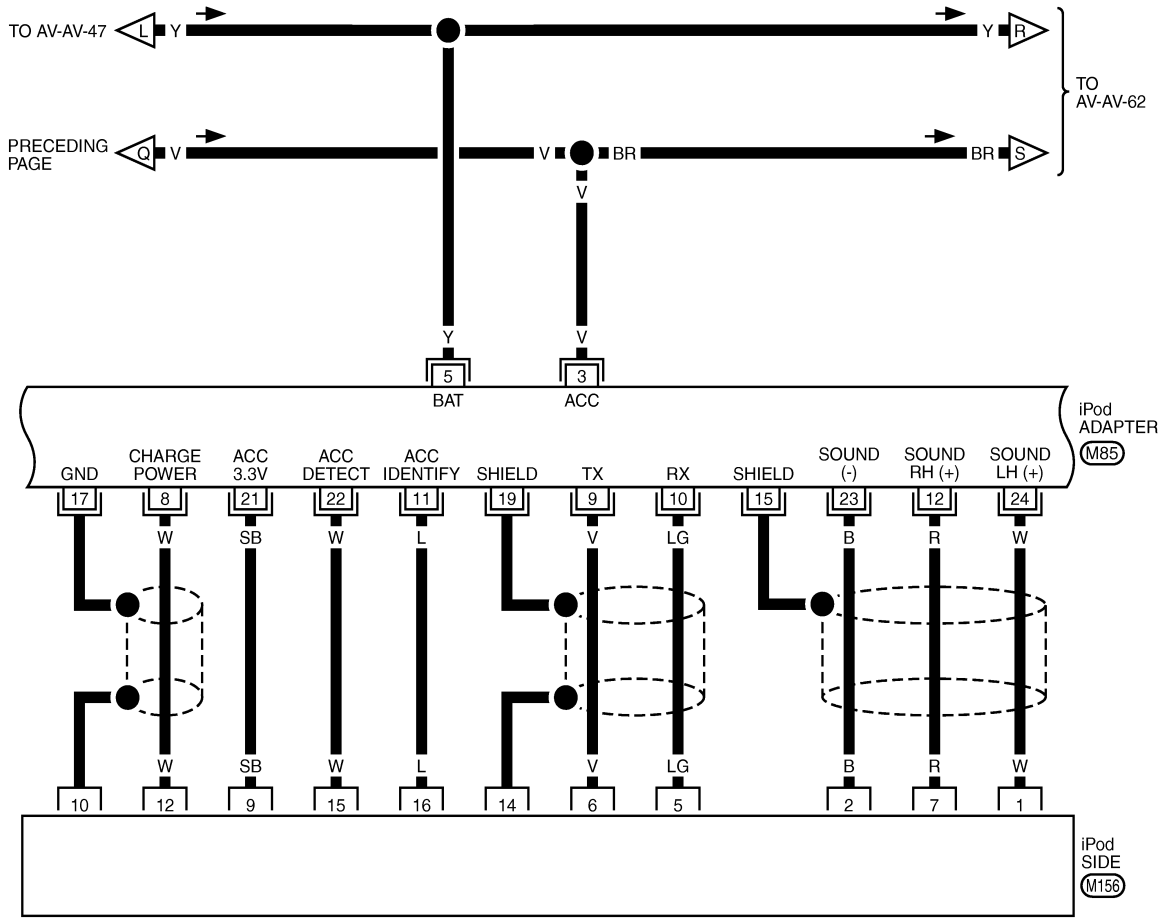
AV-AV-56

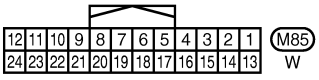


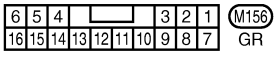


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8297E

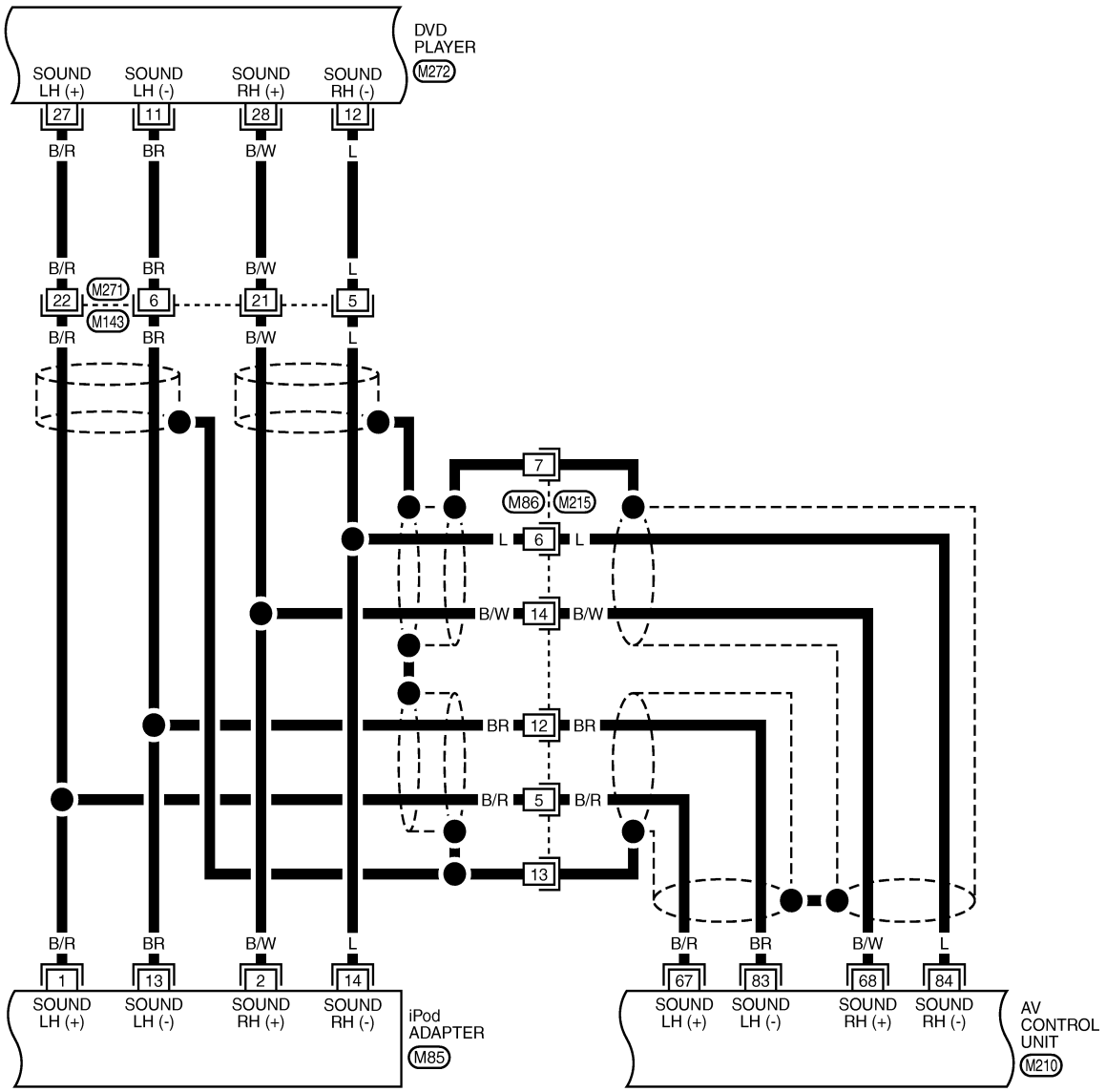

TO AV-AV-47
L
Y
Y
R
TO
AV-AV-62
PRECEDING
PAGE
Q
V
V
BR
BR
S
V
Y
V
5
BAT
3
ACC
iPod
ADAPTER
M85
GND
CHARGE
POWER
ACC
3.3V
ACC
DETECT
ACC
IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND
(-)
SOUND
RH (+)
SOUND
LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod
SIDE
M156

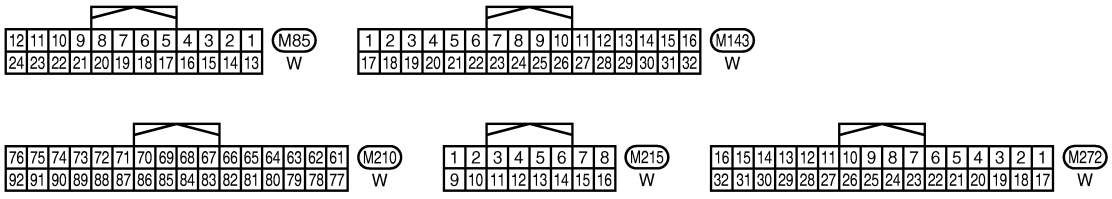

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6737E

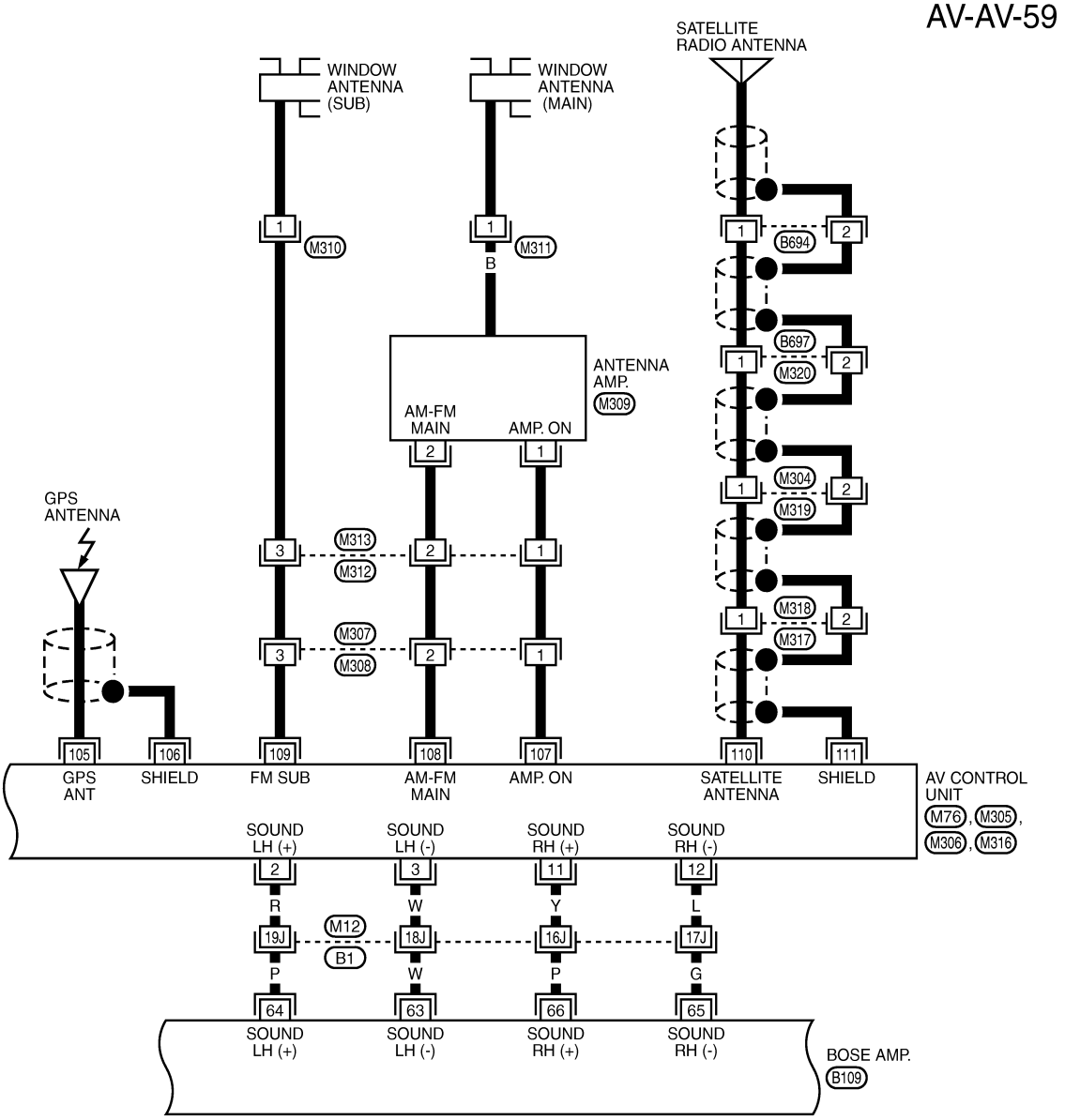
AV-AV-58

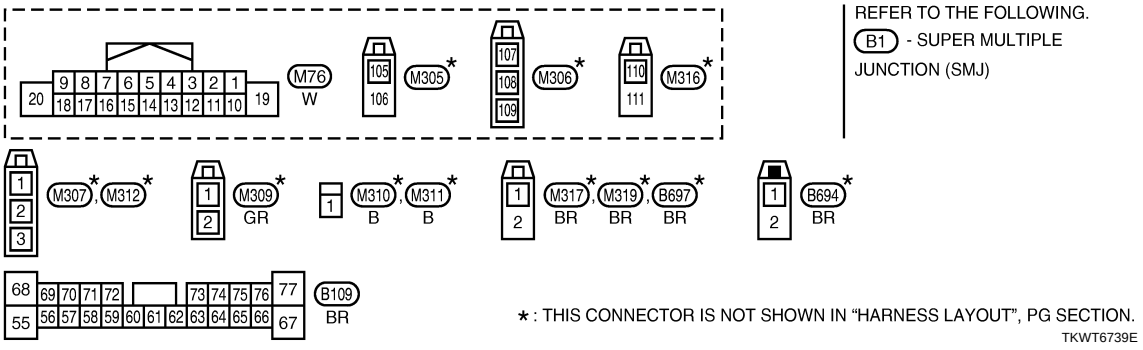




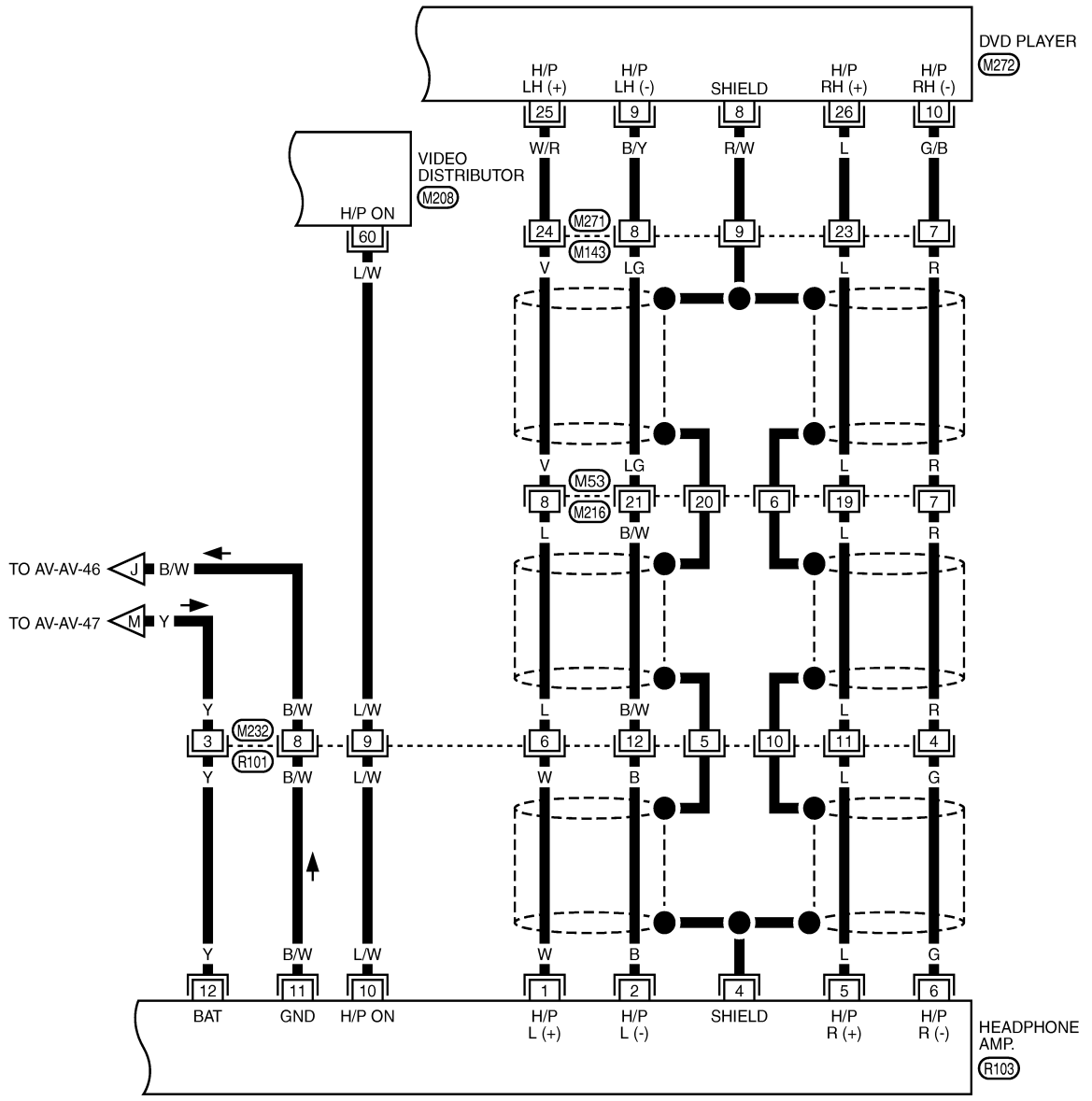
TKWT6738E

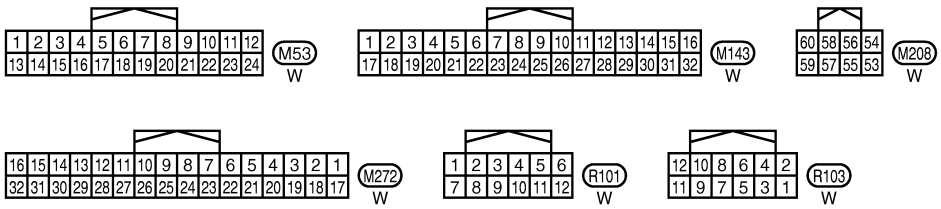
AV-AV-59


SATELLITE RADIO ANTENNA
WINDOW ANTENNA (SUB)
WINDOW ANTENNA (MAIN)
M310
M311
B
B694
B697
M320
M304
M319
M318
M317
ANTENNA AMP.
M309
AM-FM MAIN
AMP. ON
GPS ANTENNA
M313
M312
M307
M308
105
106
109
108
107
110
111
GPS ANT
SHIELD
FM SUB
AM-FM MAIN
AMP. ON
SATELLITE ANTENNA
SHIELD
AV CONTROL UNIT
M76, M305, M306, M316
SOUND LH (+)
SOUND LH (-)
SOUND RH (+)
SOUND RH (-)
R
W
Y
L
M12
B1
19J
18J
16J
17J
P
W
P
G
64
63
66
65
BOSE AMP.
B109


M76
W
M305
M306
M316
M307, M312
M309
GR
M310, M311
B
B
M317, M319, M697
BR
BR
BR
B694
B109
BR
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)
★ : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.
TKWT6739E

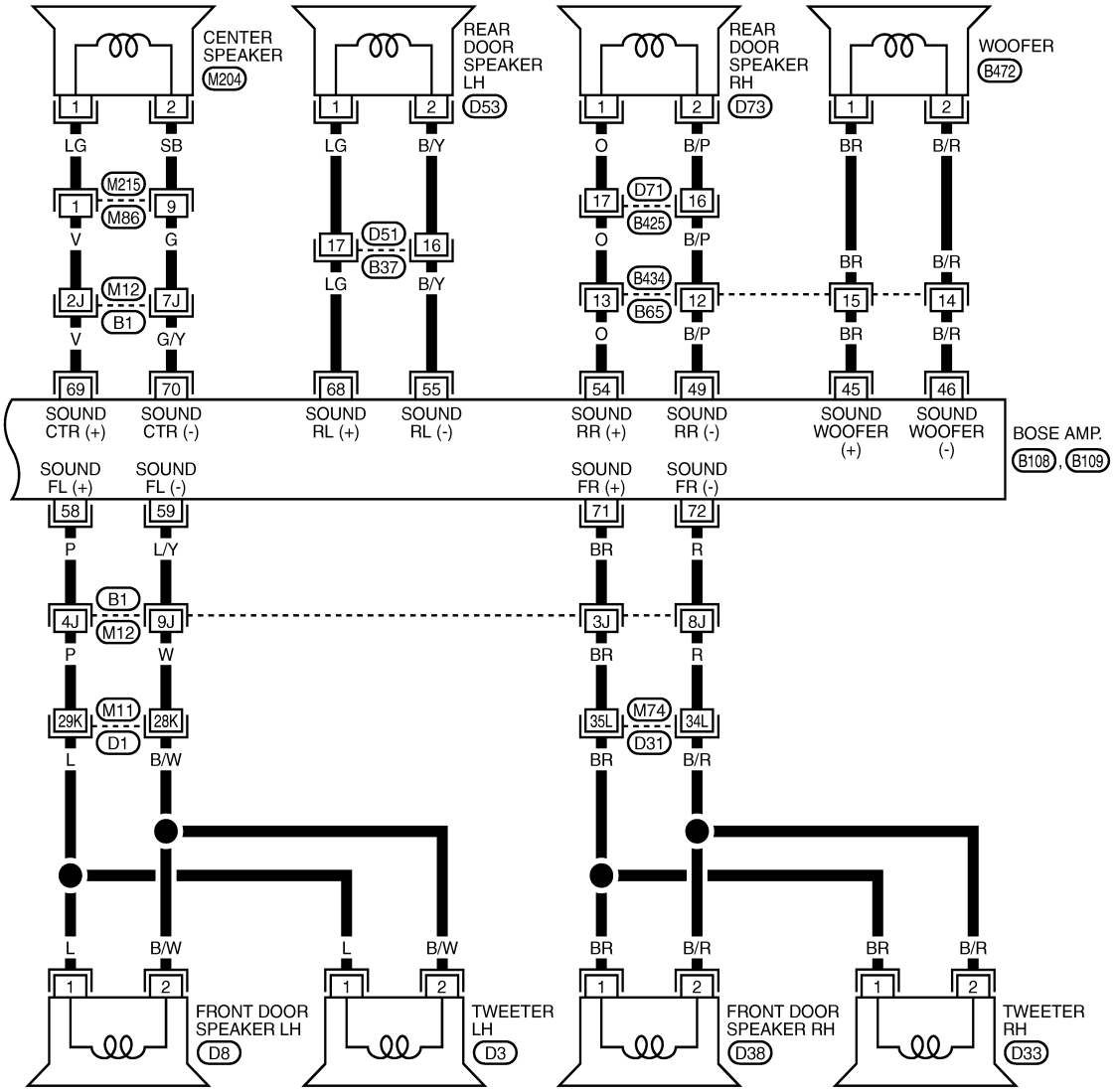
AV-AV-60

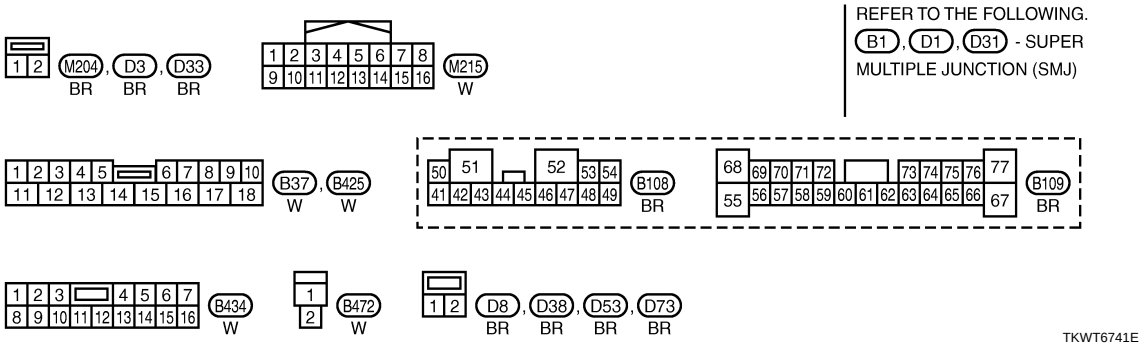




TKWT6740E

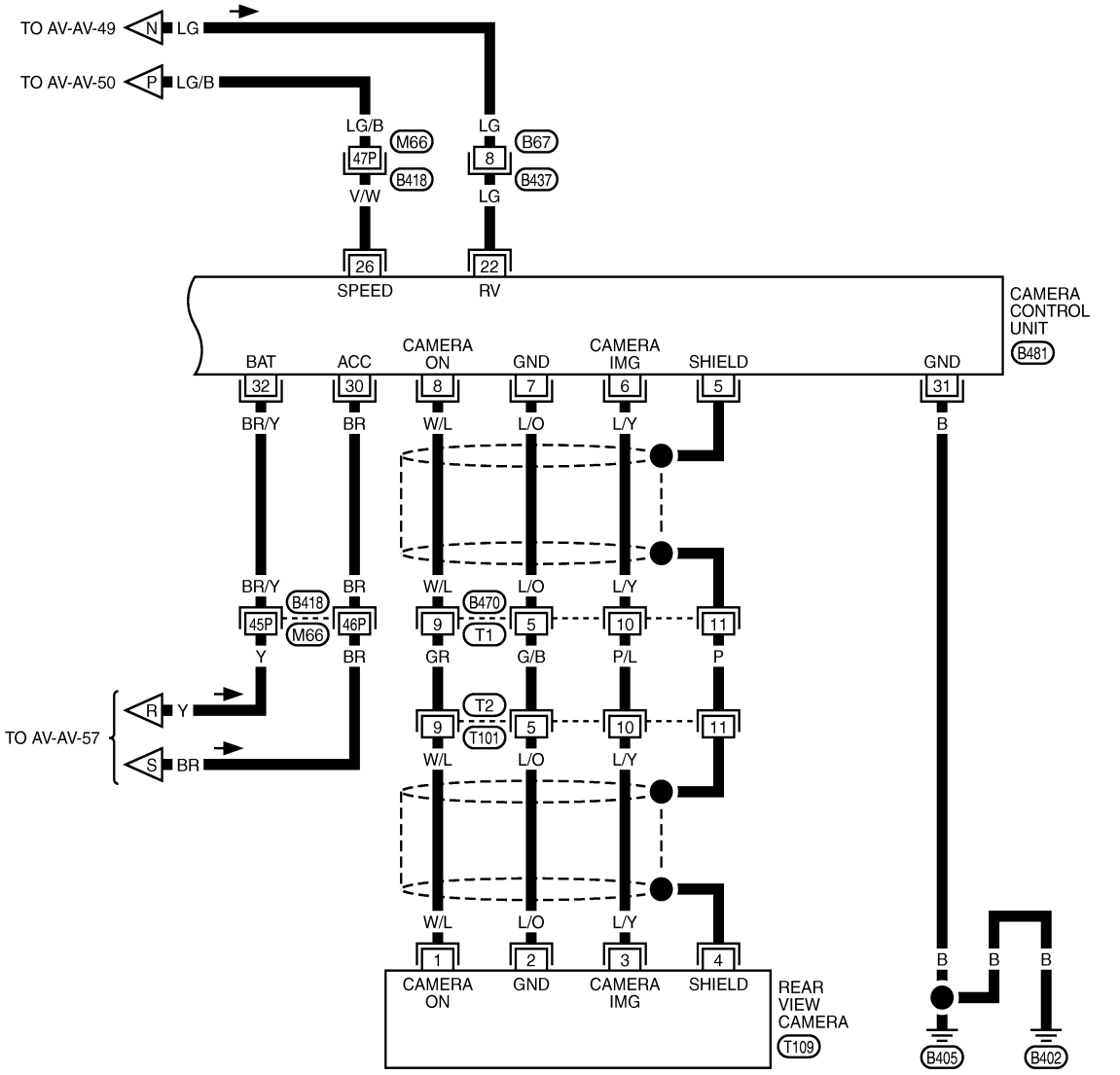
AV-AV-61

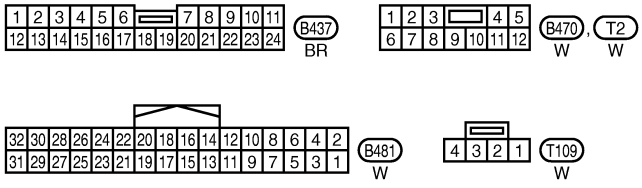




TKWT6741E

AV-AV-62



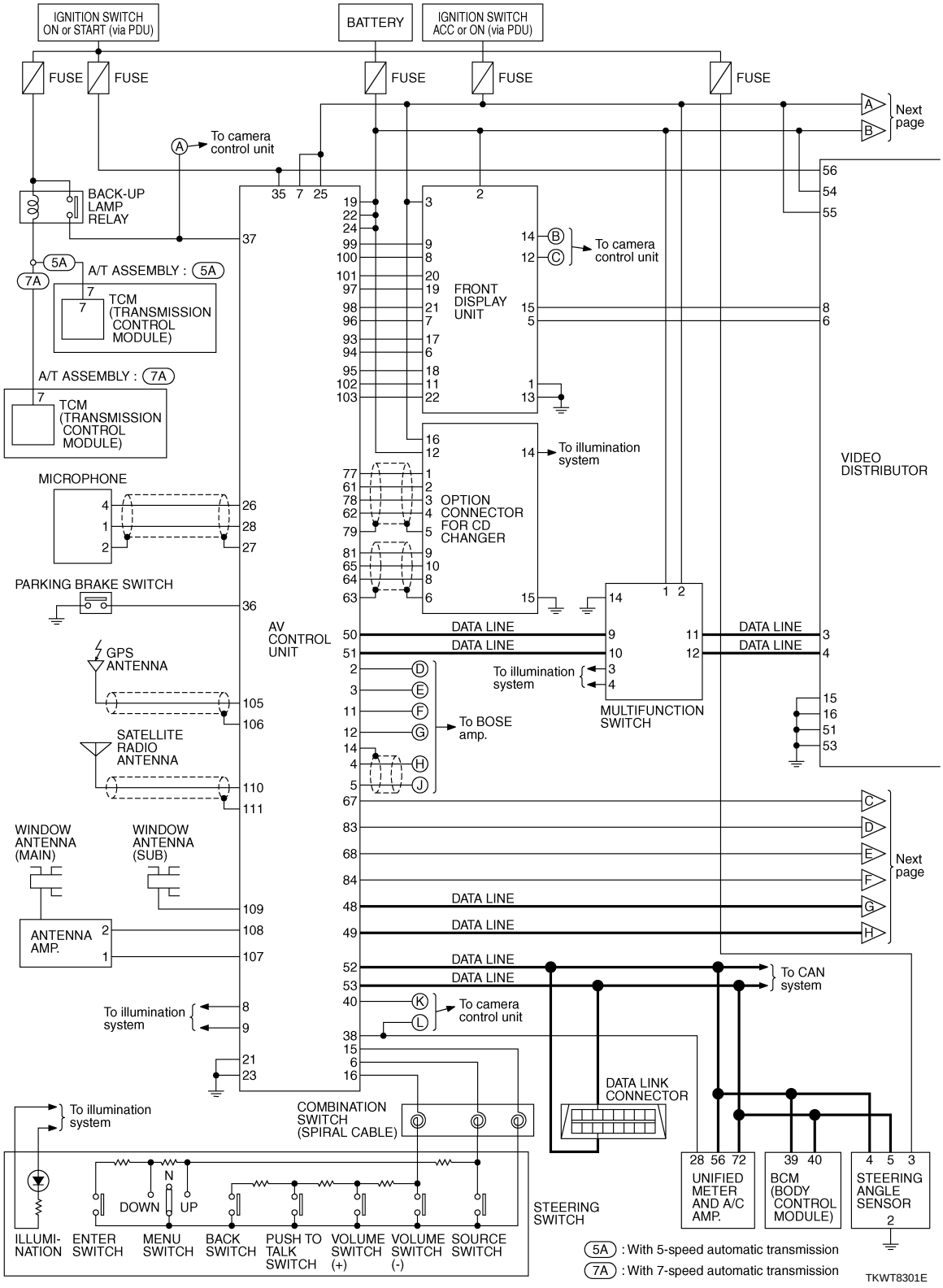


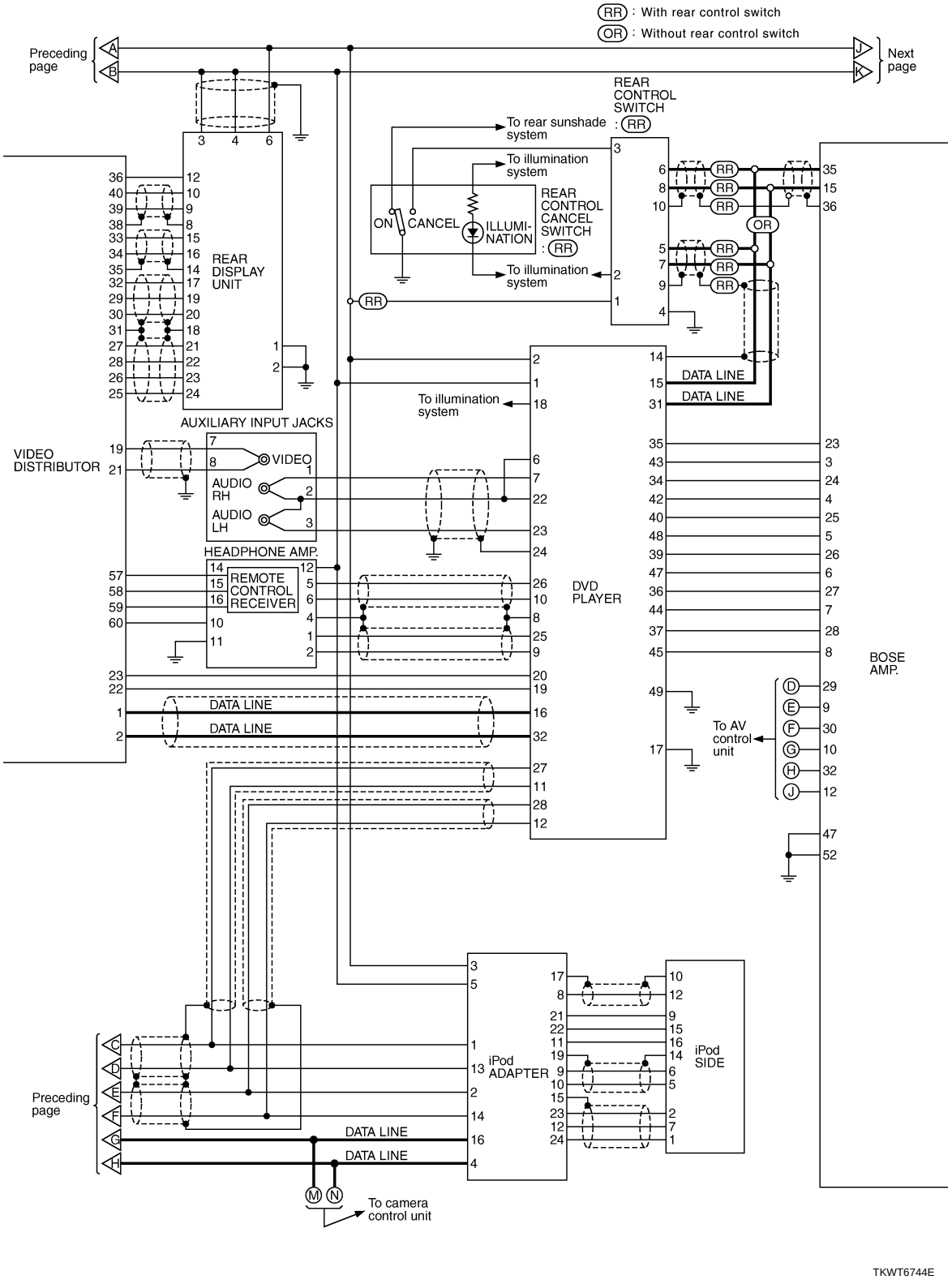
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

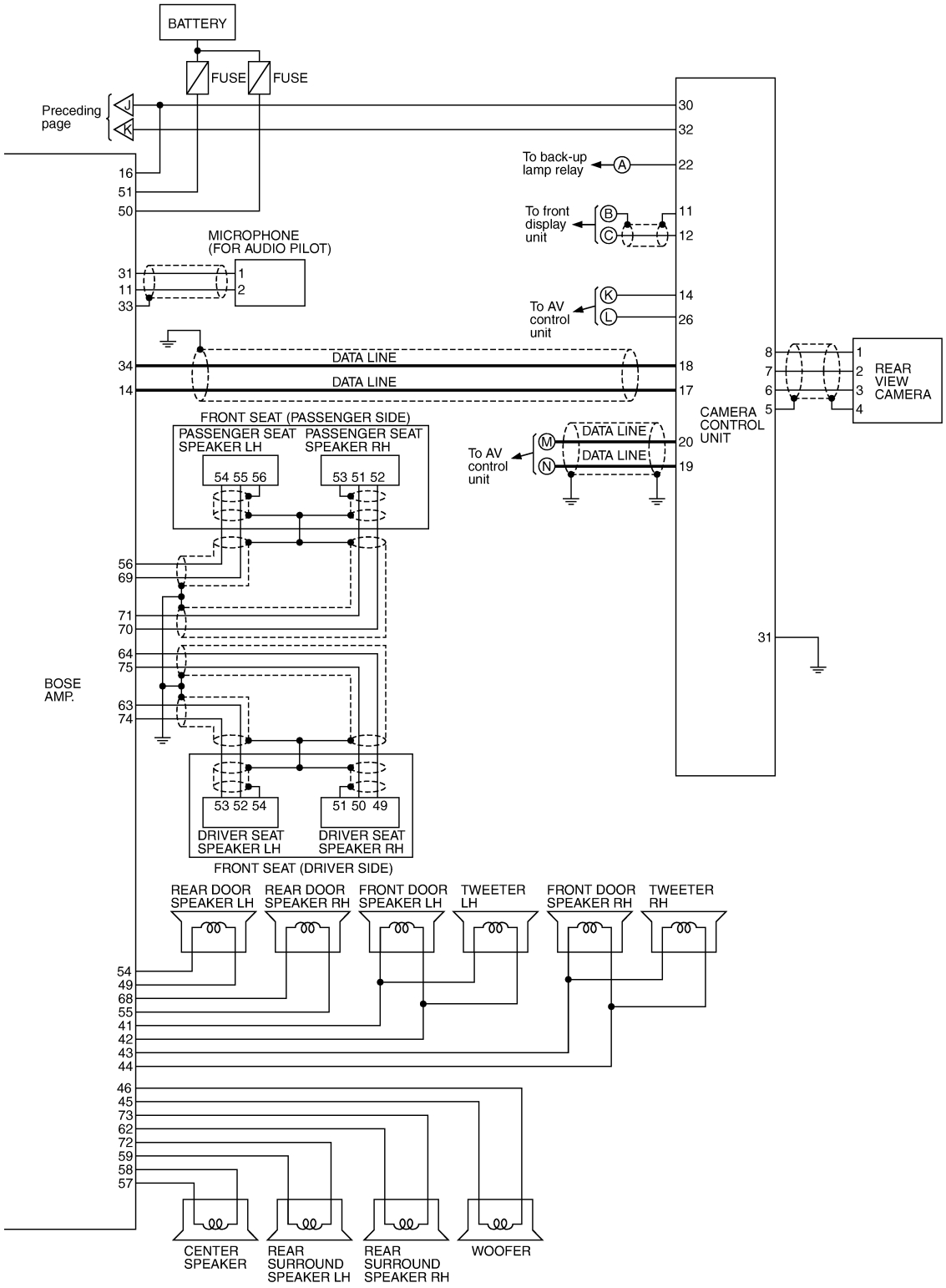
TKWT6742E

Schematic - BOSE 5.1ch Surround Audio System -

INFOID:0000000004391612




RR : With rear control switch
OR : Without rear control switch
Preceding page
Next page
REAR CONTROL SWITCH : RR
To rear sunshade system
To illumination system
REAR CONTROL CANCEL SWITCH : RR
ON
CANCEL
ILLUMI-NATION
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
DVD PLAYER
DATA LINE
BOSE AMP.
To AV control unit
iPod ADAPTER
iPod SIDE
To camera control unit
TKWT6744E



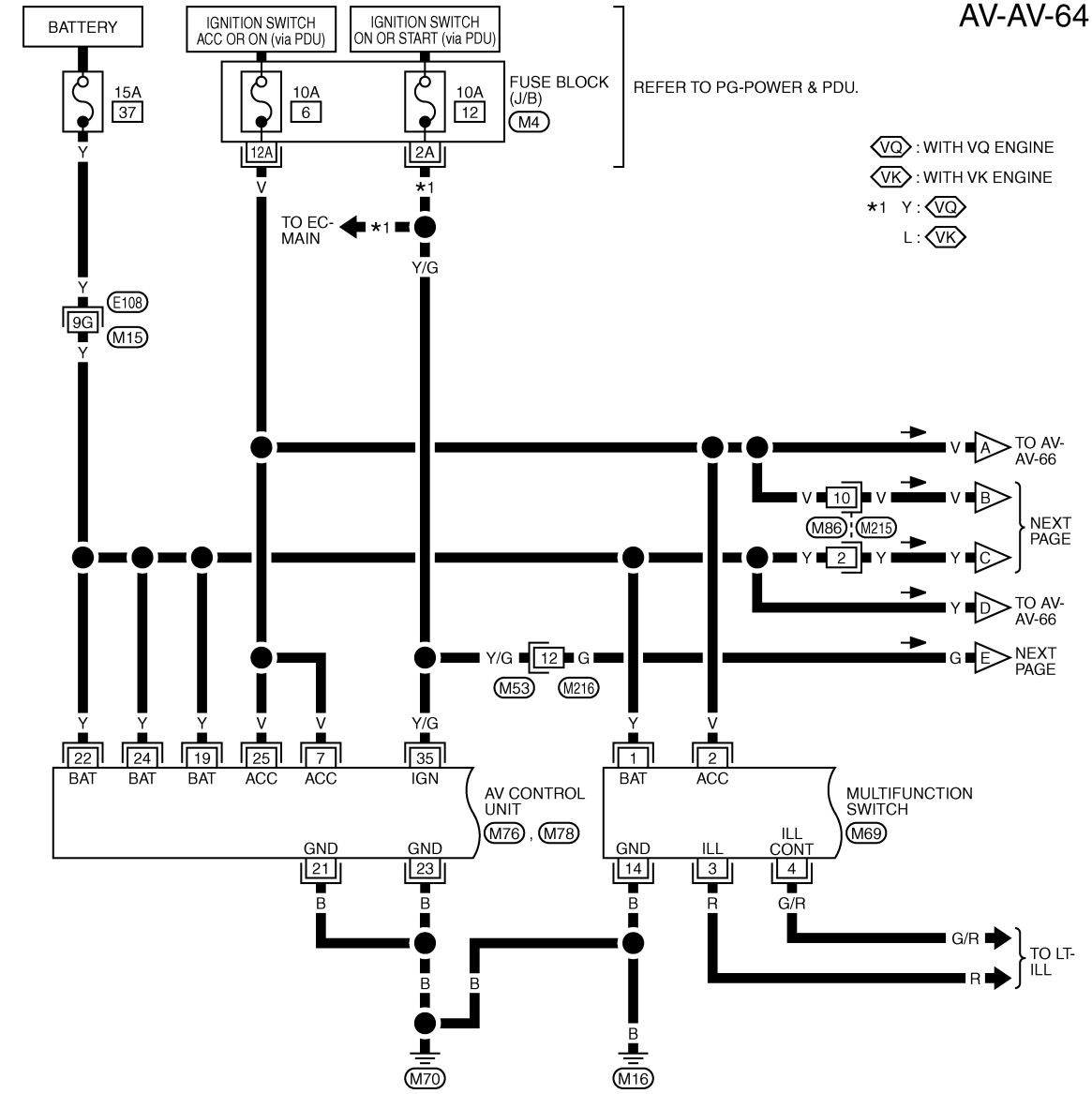
TKWT6745E

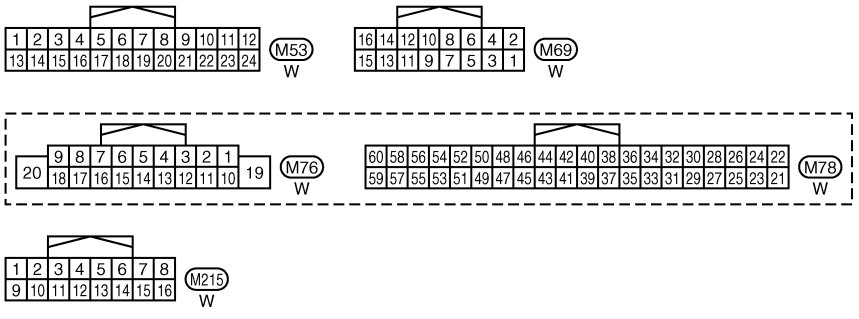
Wiring Diagram - AV - / BOSE Surround Audio 5.1ch System

INFOID:0000000004391613

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

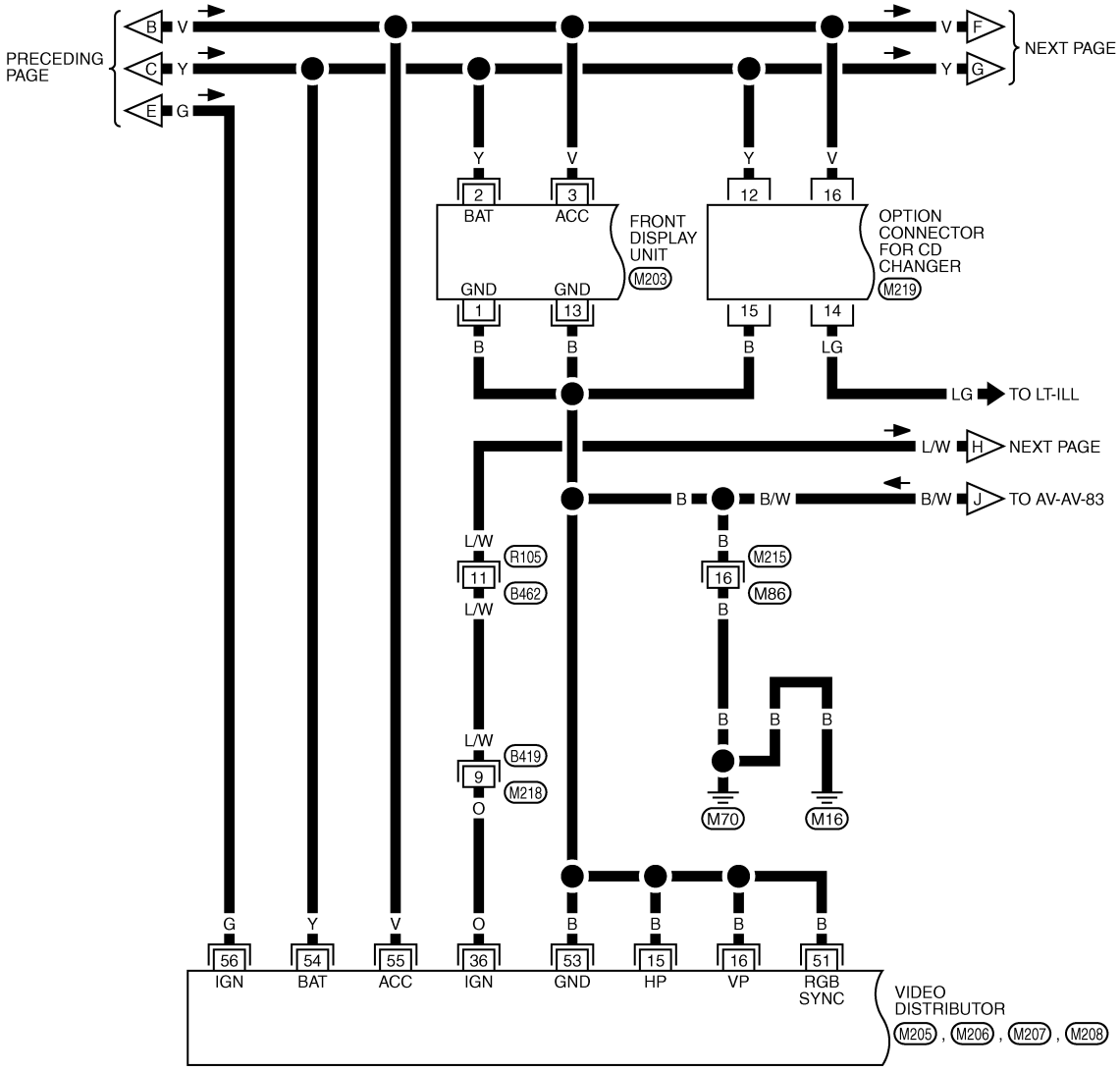


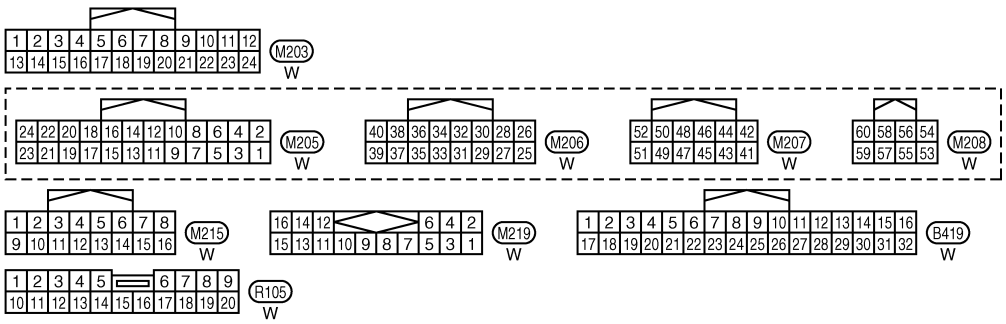


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8302E

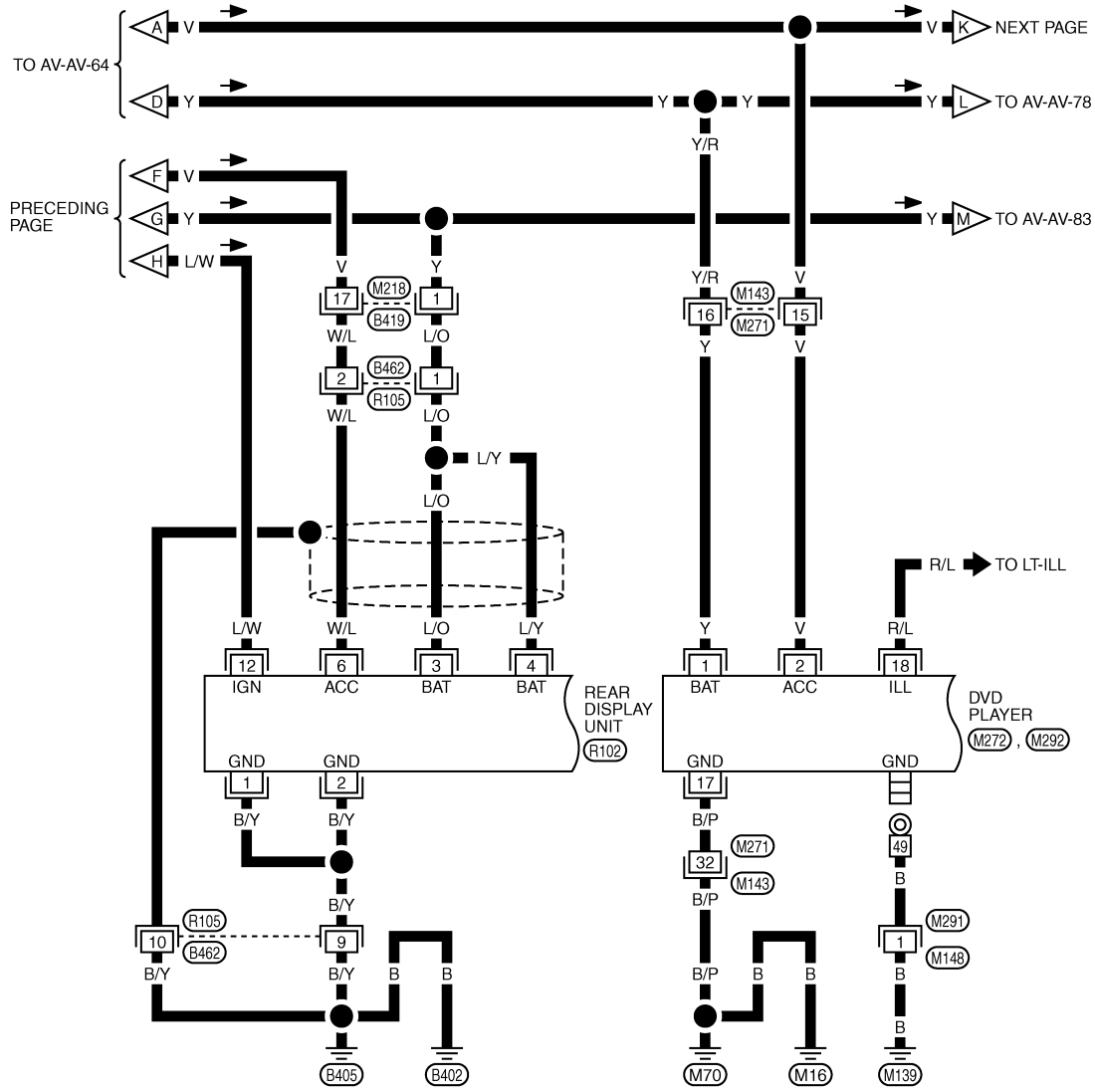
AV-AV-65

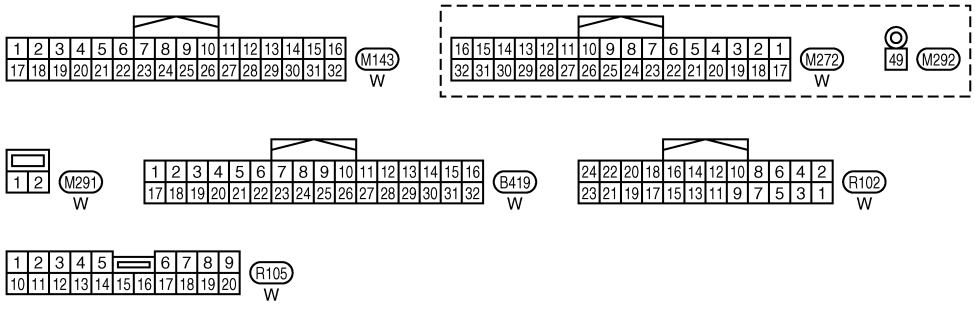




TKWT8303E

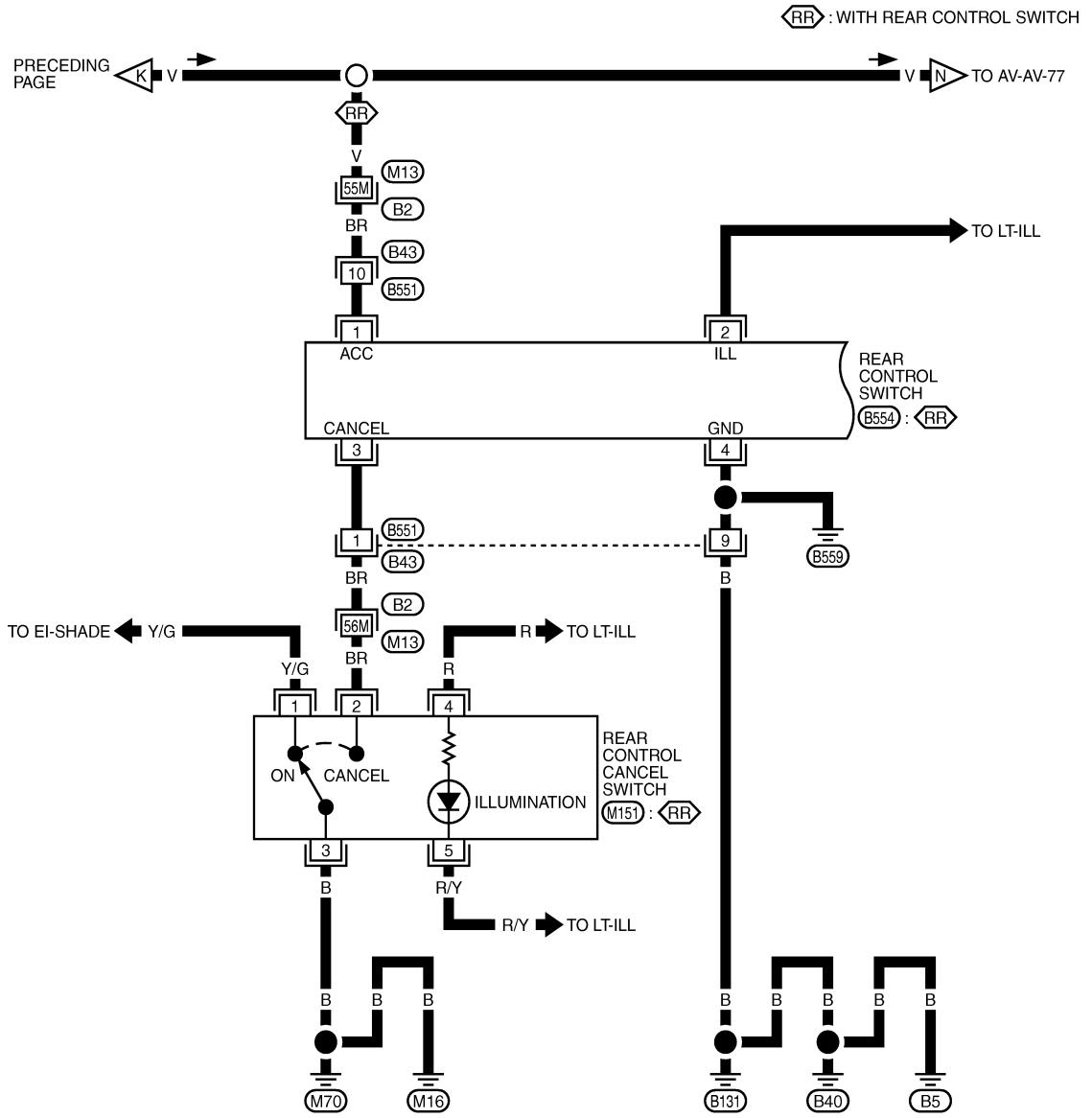
AV-AV-66

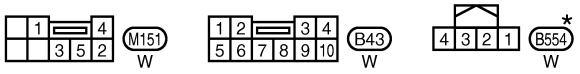




TKWT8304E

AV-AV-67



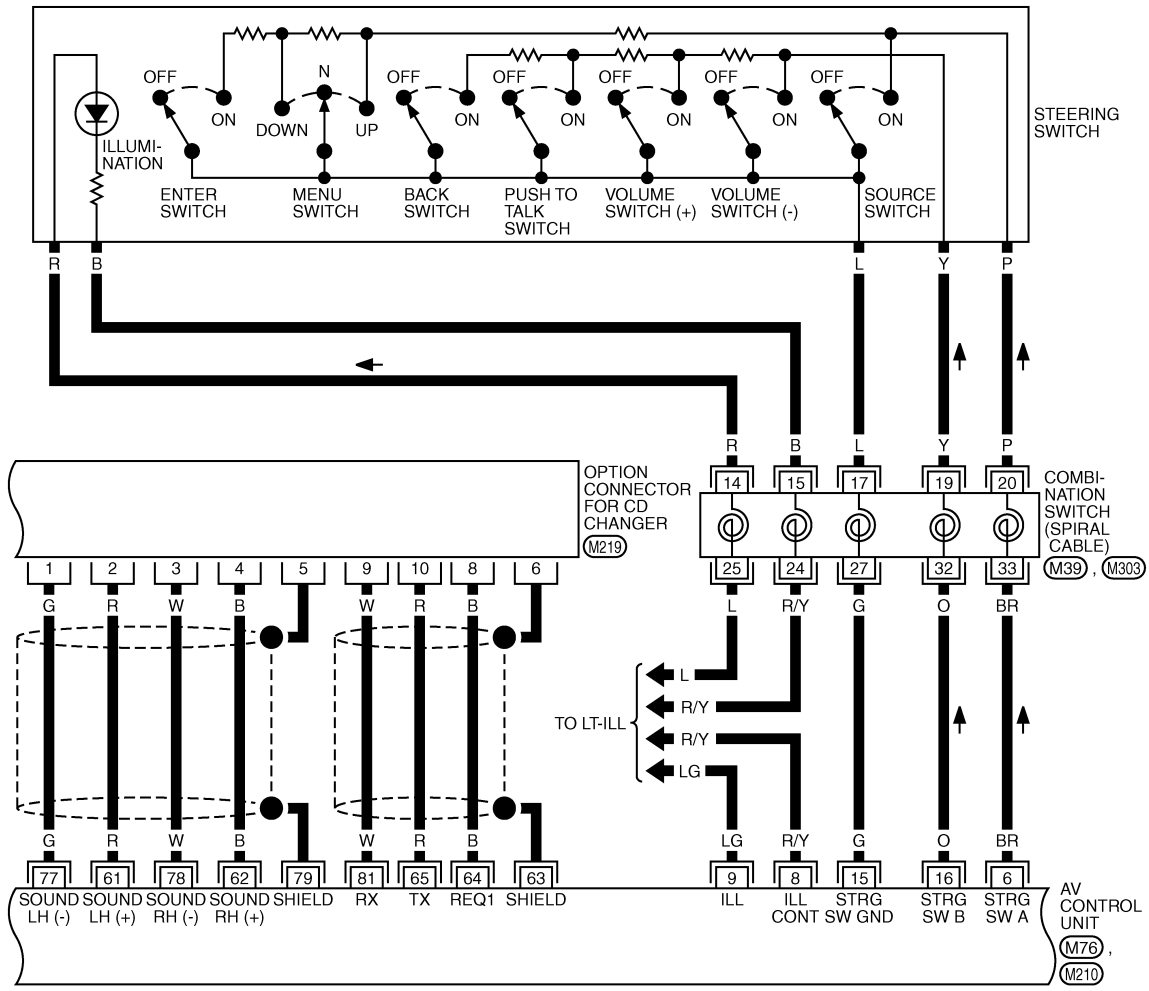


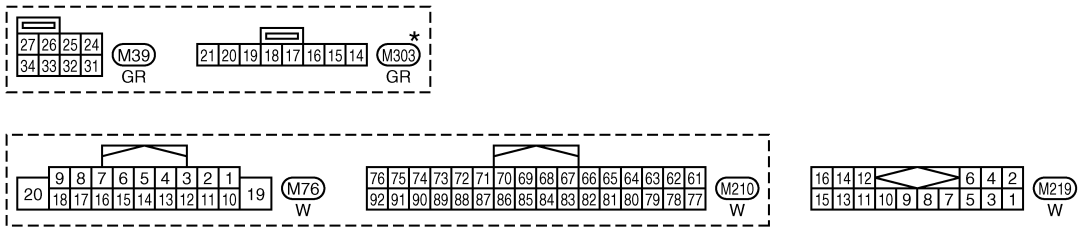
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6749E

AV-AV-68

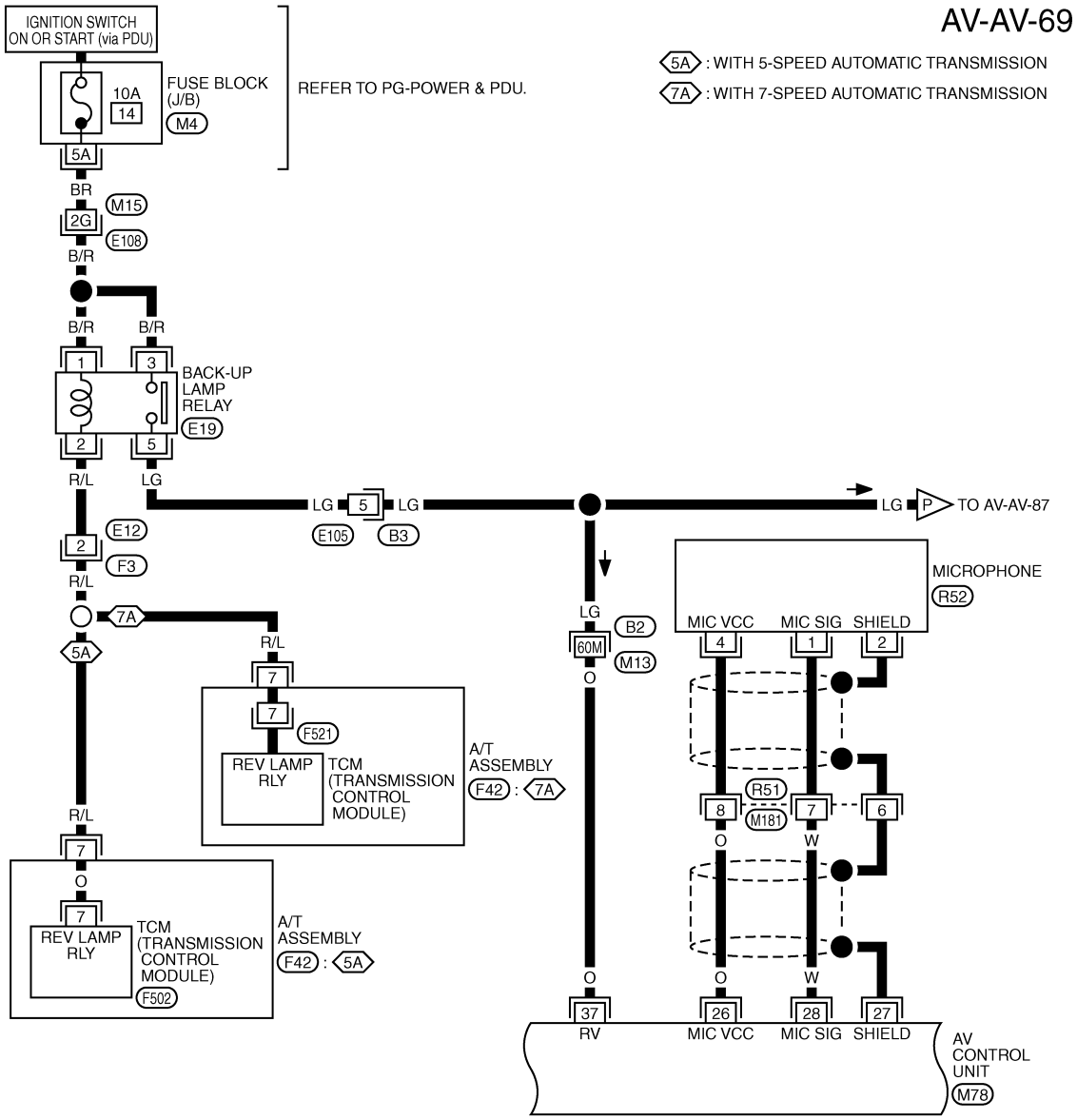


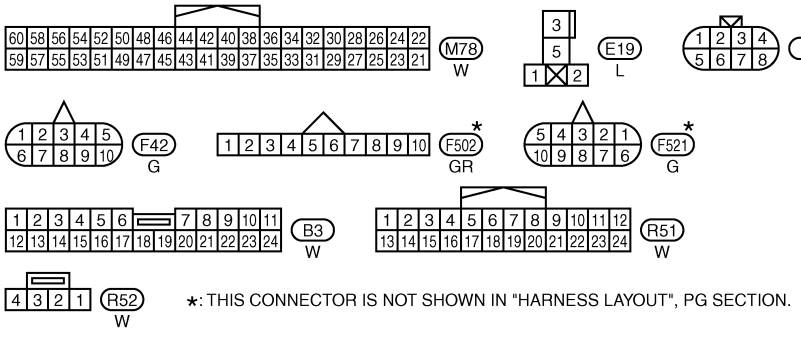


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8305E

AV-AV-69

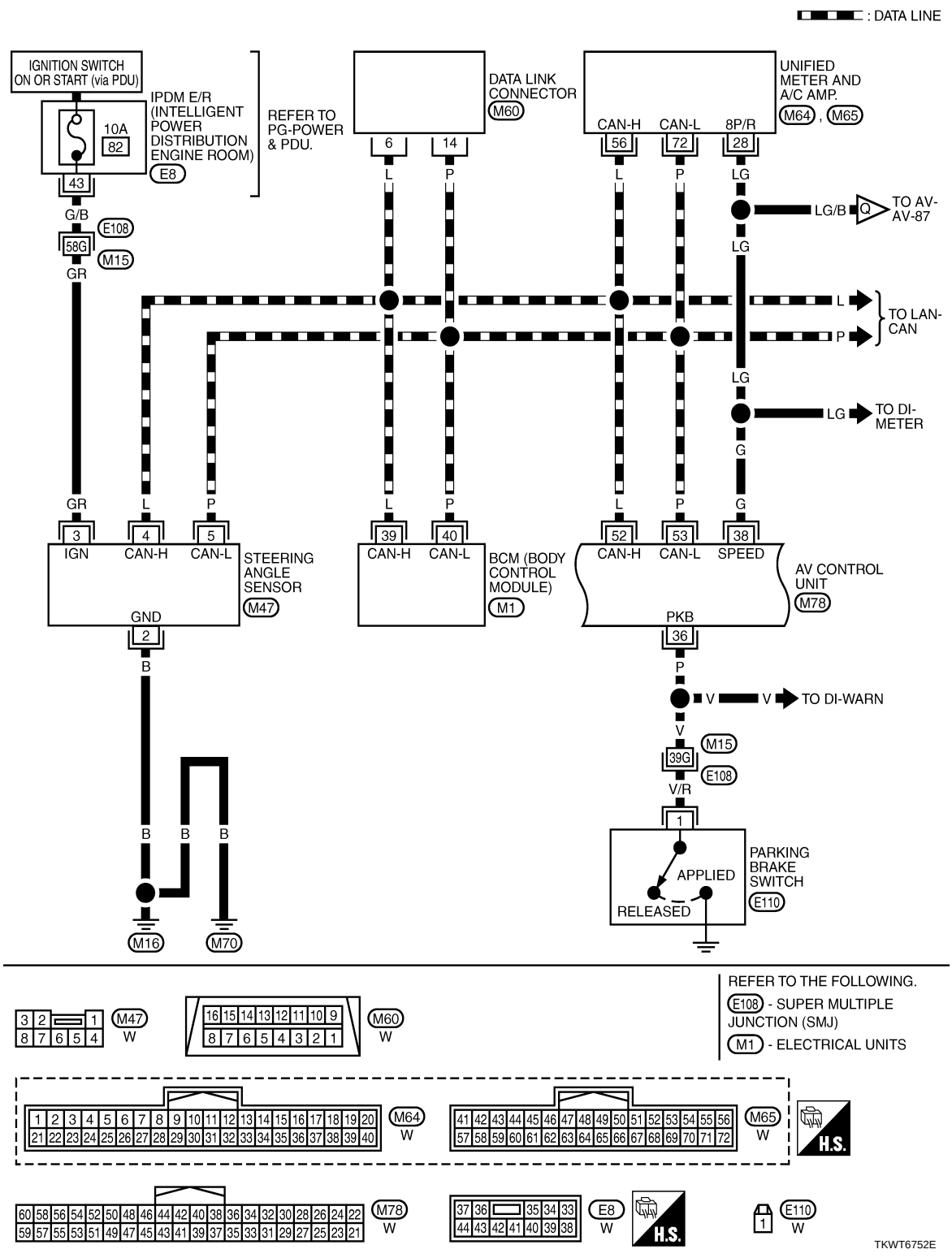




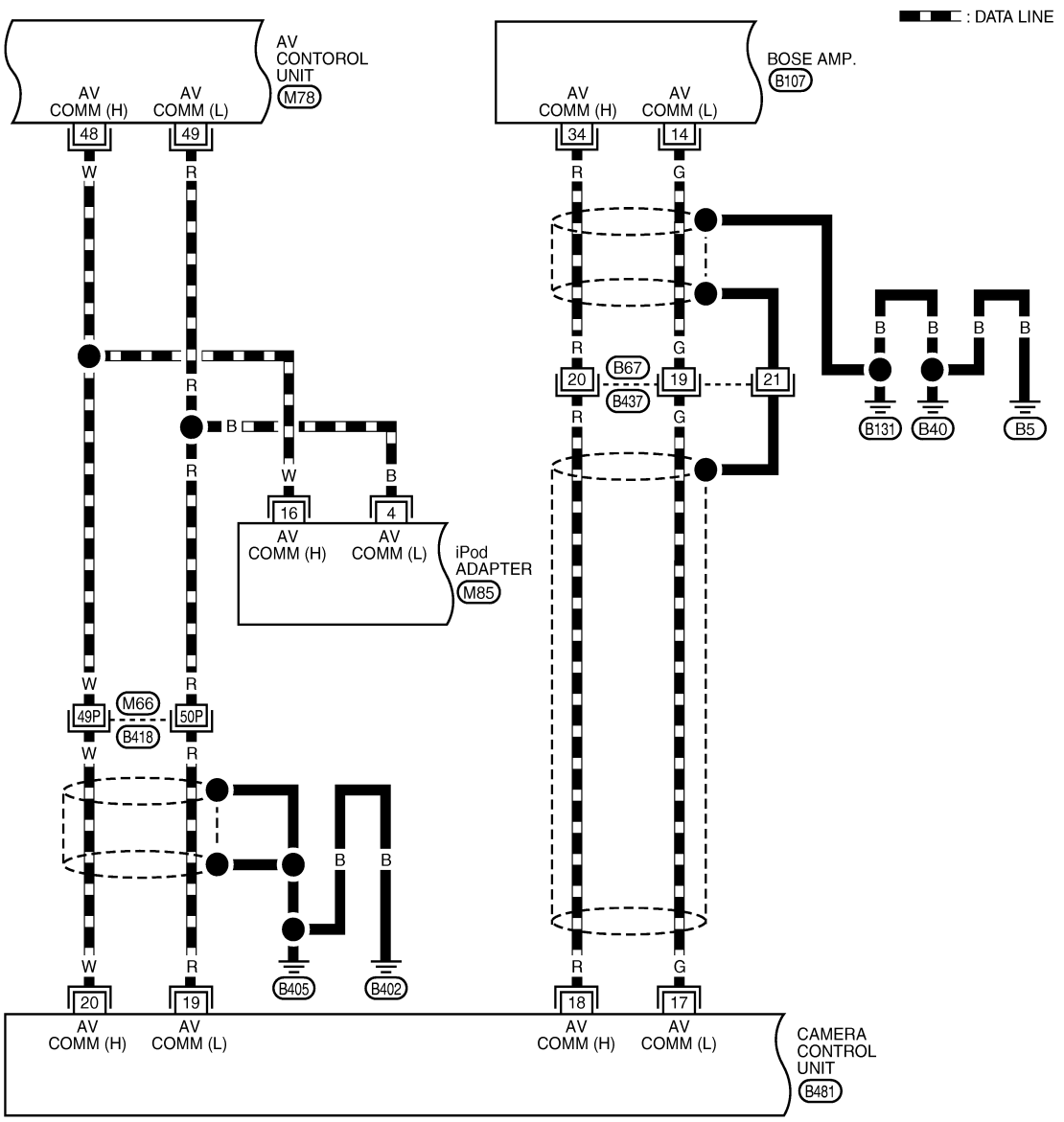
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

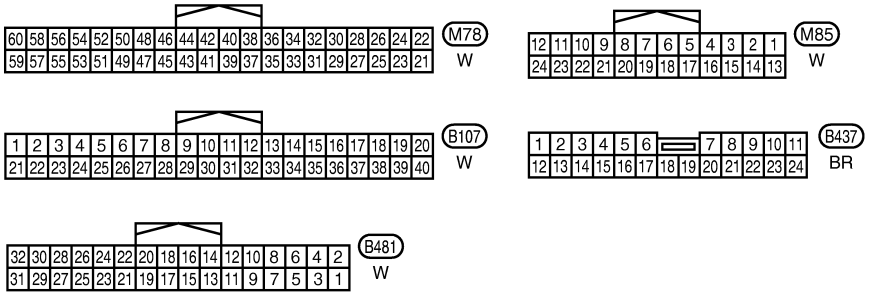
TKWT8306E

AV-AV-70


: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
G/B
E108
58G
M15
GR
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
L
P
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56
72
28
L
P
LG
LG/B Q TO AV-AV-87
LG
L
P
TO LAN-CAN
LG
LG TO DI-METER
G
GR
L
P
3
4
5
IGN
CAN-H
CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE) M1
52
53
38
CAN-H
CAN-L
SPEED
AV CONTROL UNIT M78
PKB
36
P
V
V TO DI-WARN
V
M15
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B B B
M16
M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47 W
M60 W
M64 W
M65 W
H.S.
M78 W
E8 W
E110 W
TKWT6752E

AV-AV-71

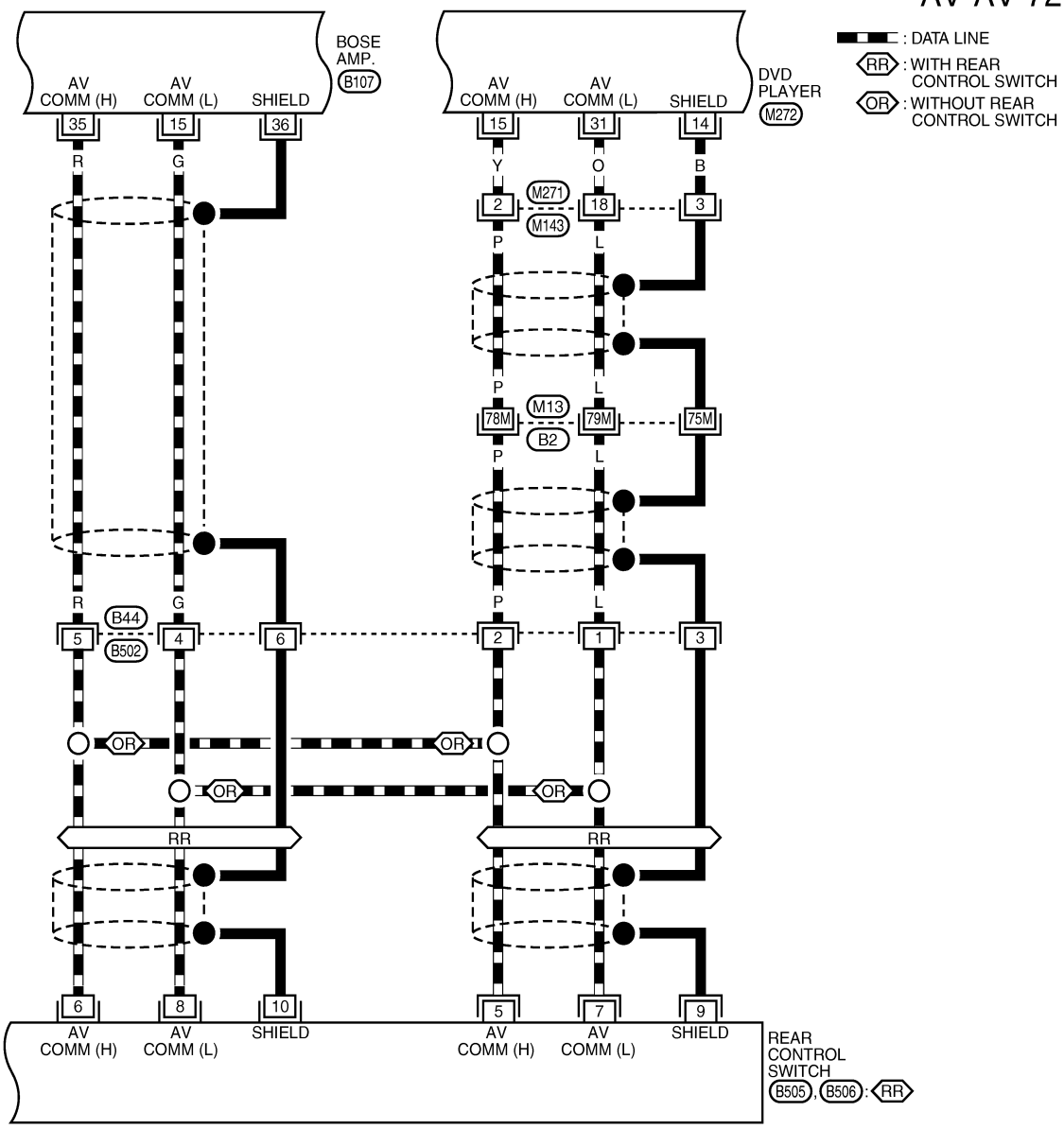


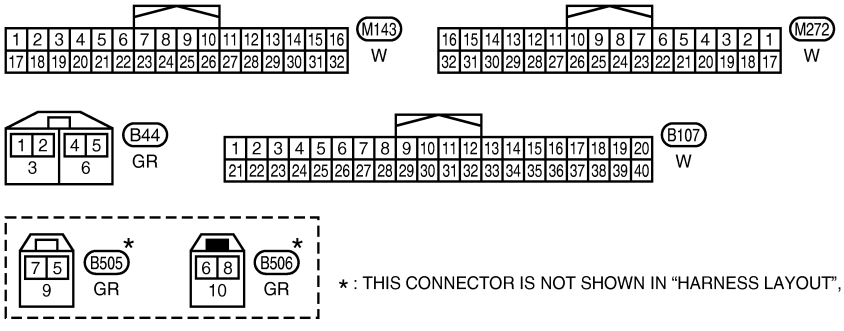


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6753E

AV-AV-72



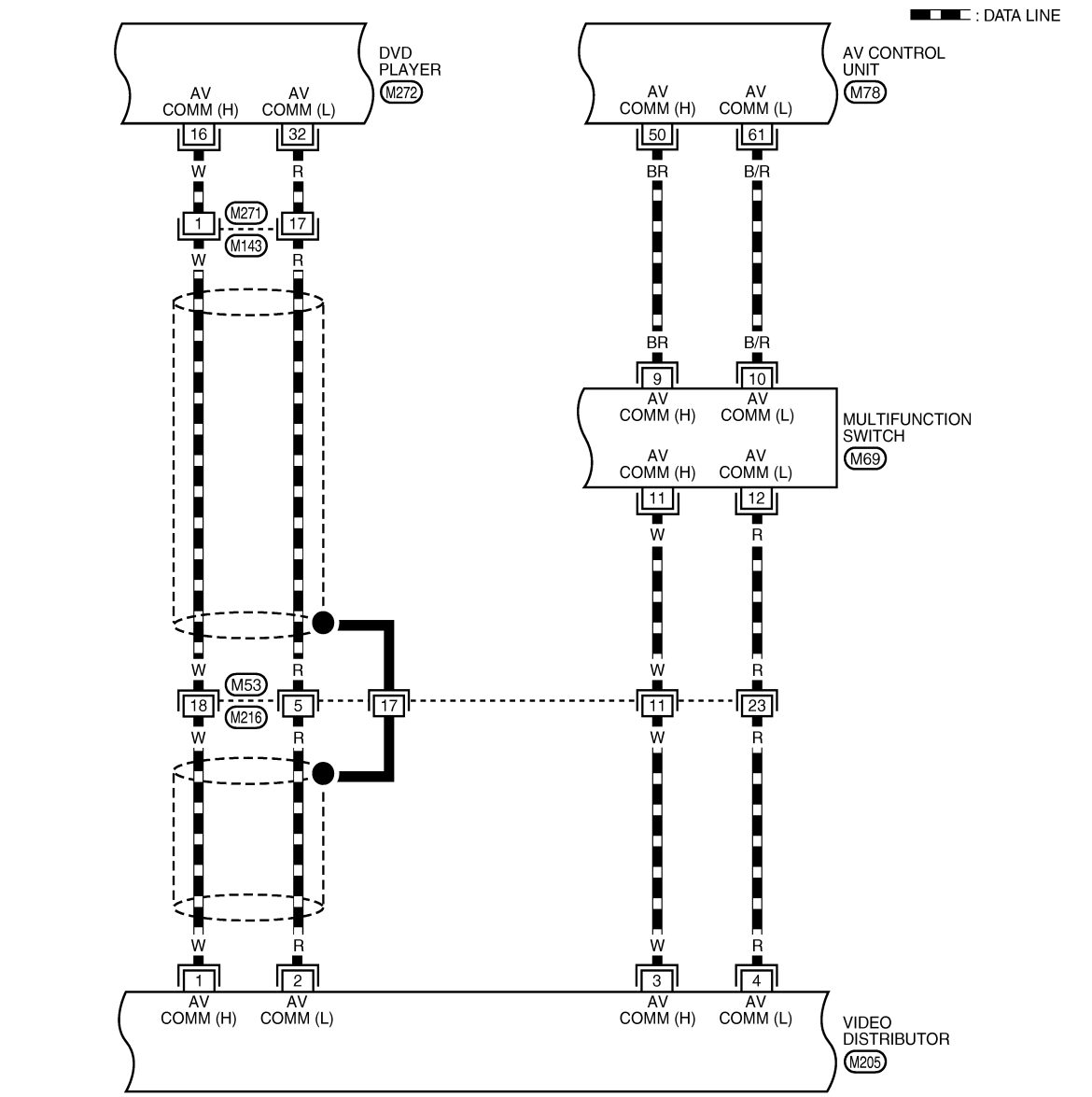


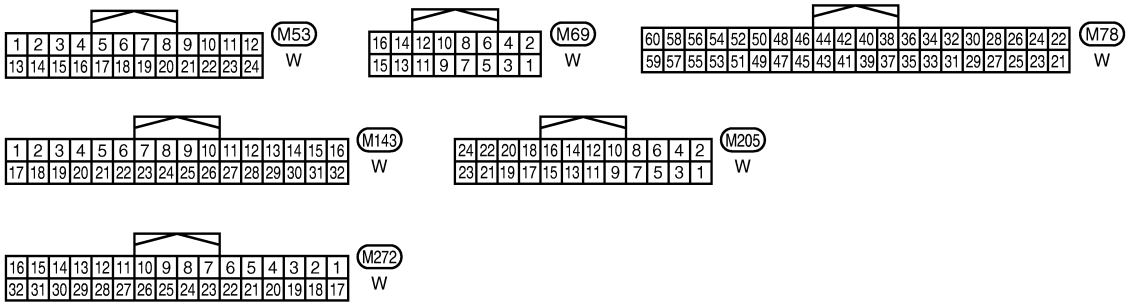
REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.

TKWT6754E

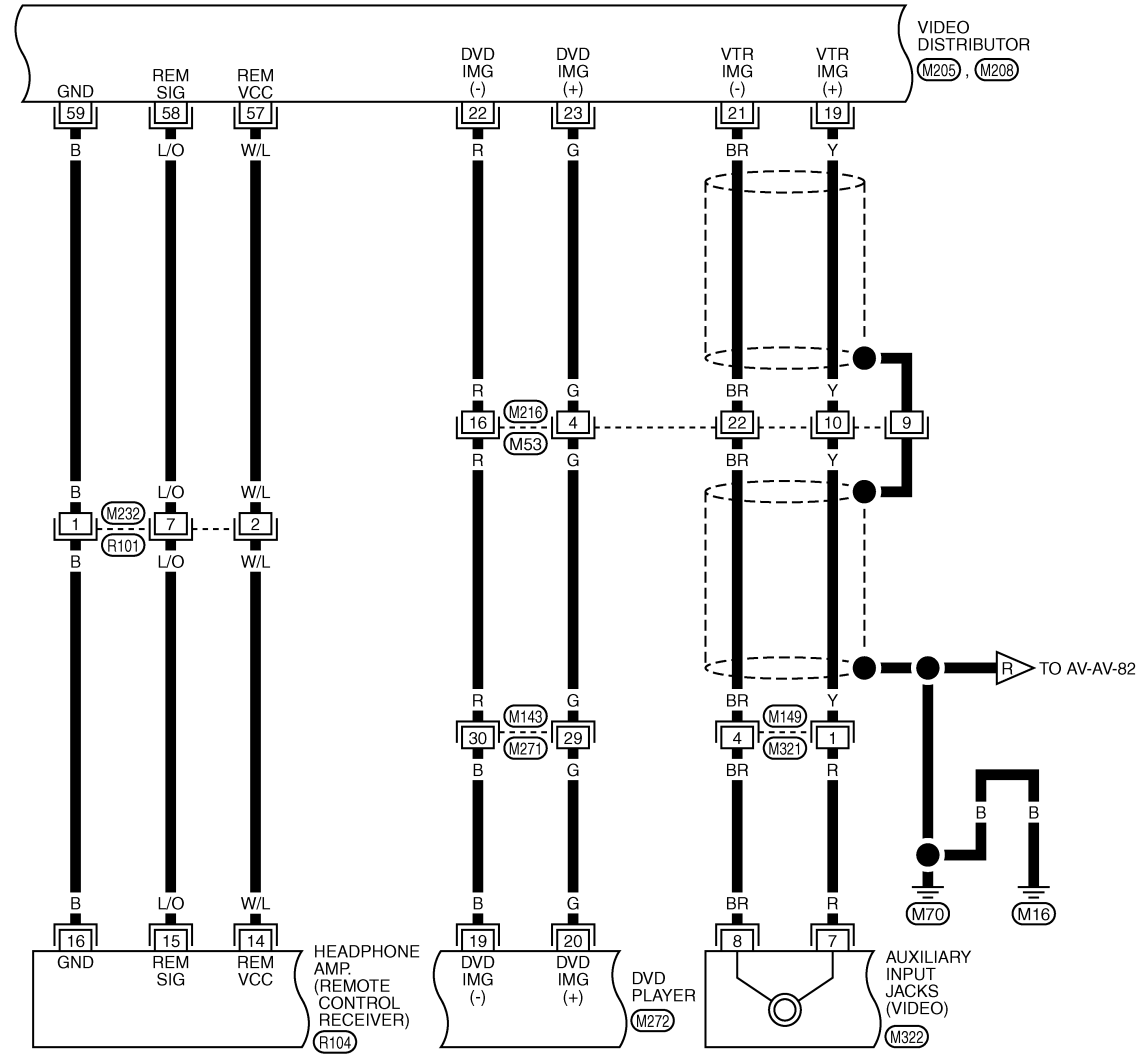
AV-AV-73





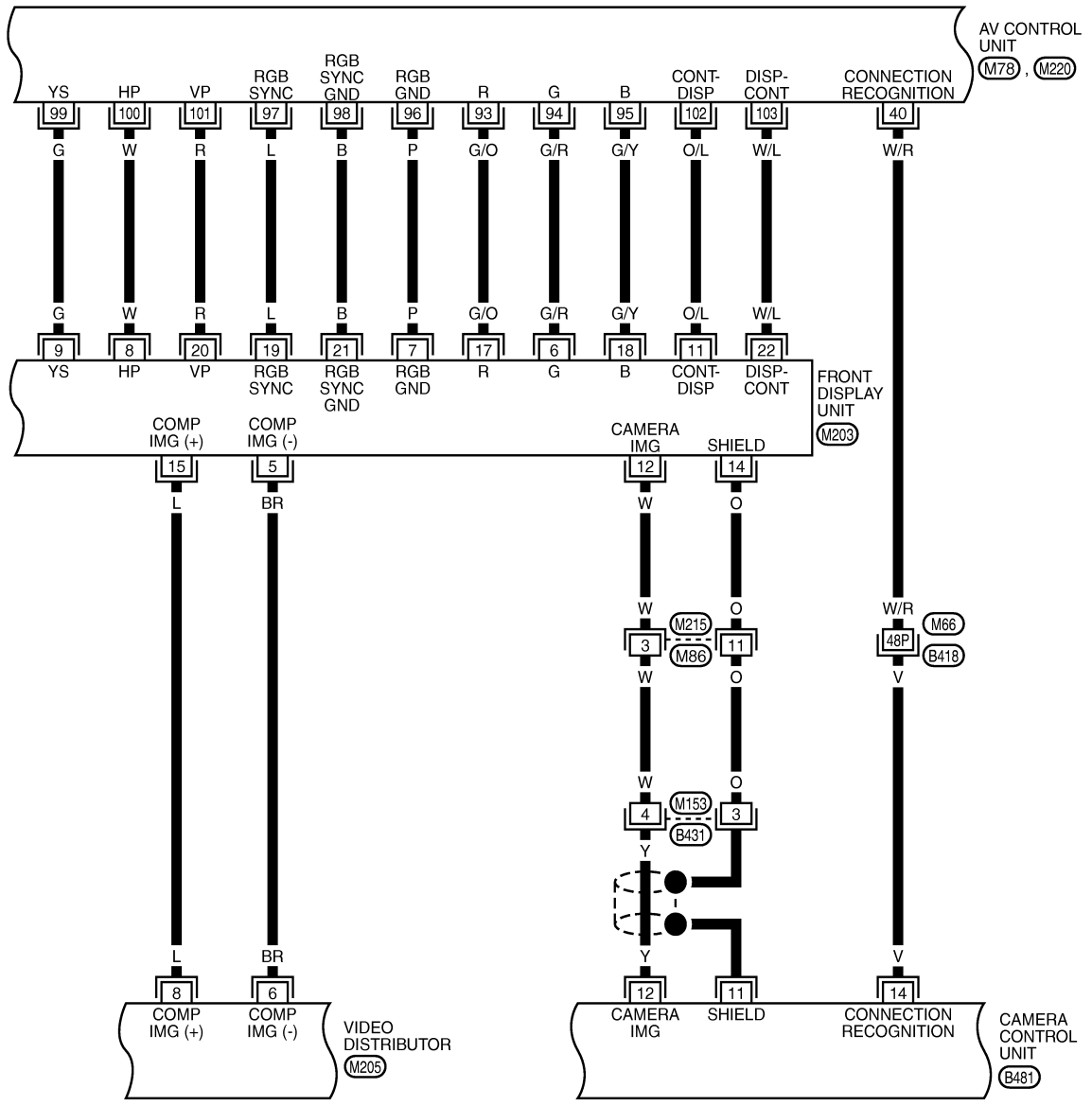
TKWT6755E

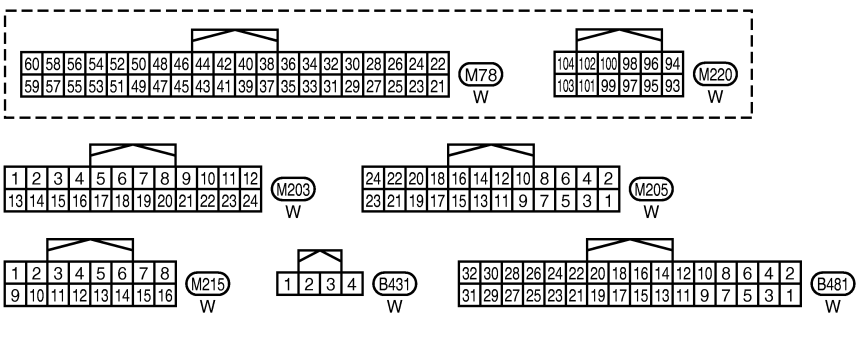
AV-AV-74



TKWT8307E

AV-AV-75

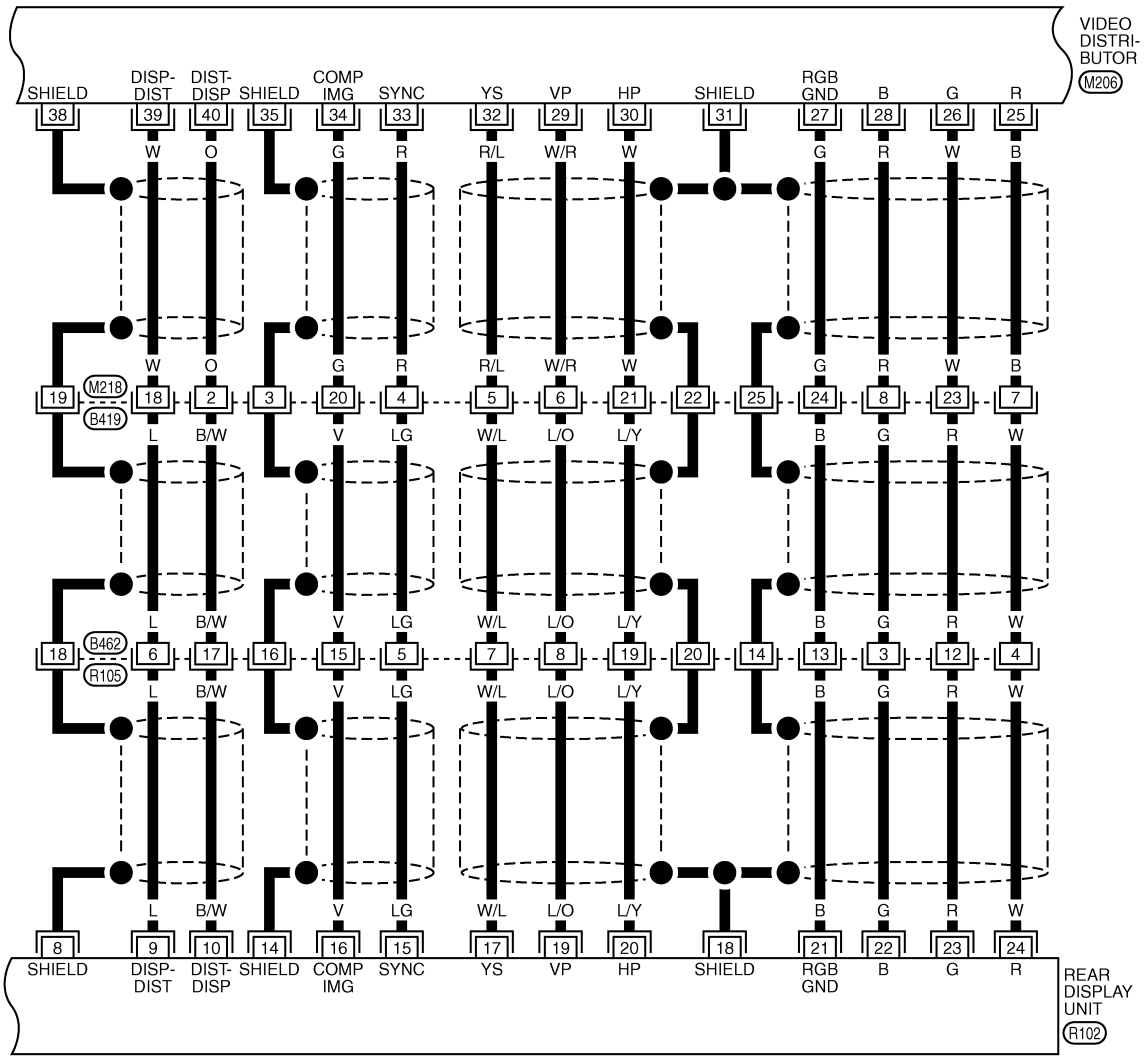


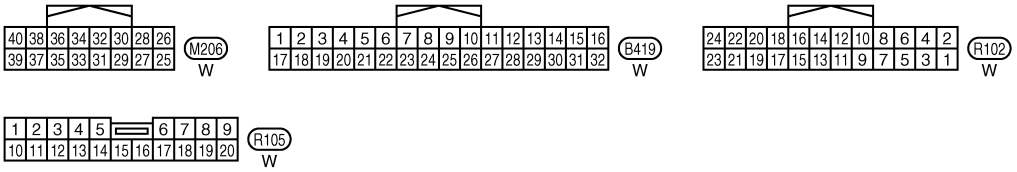


REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT6757E

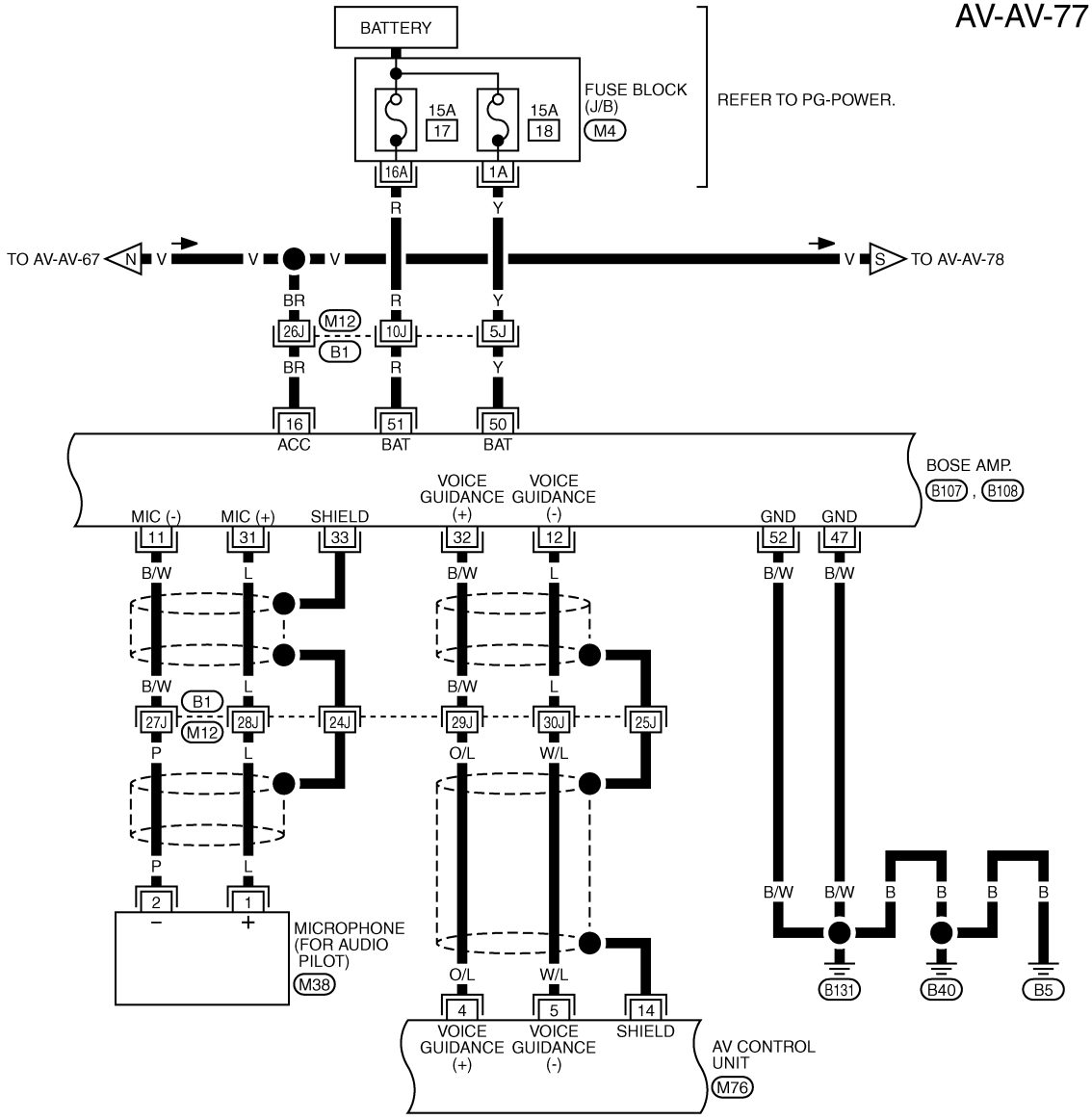
AV-AV-76

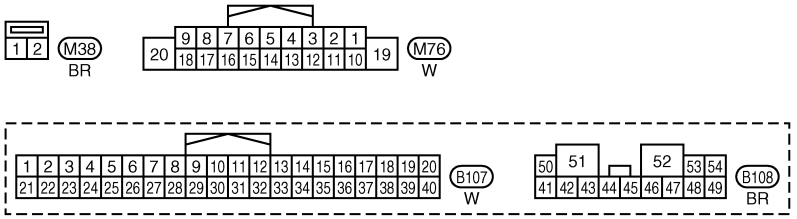




TKWT5152E

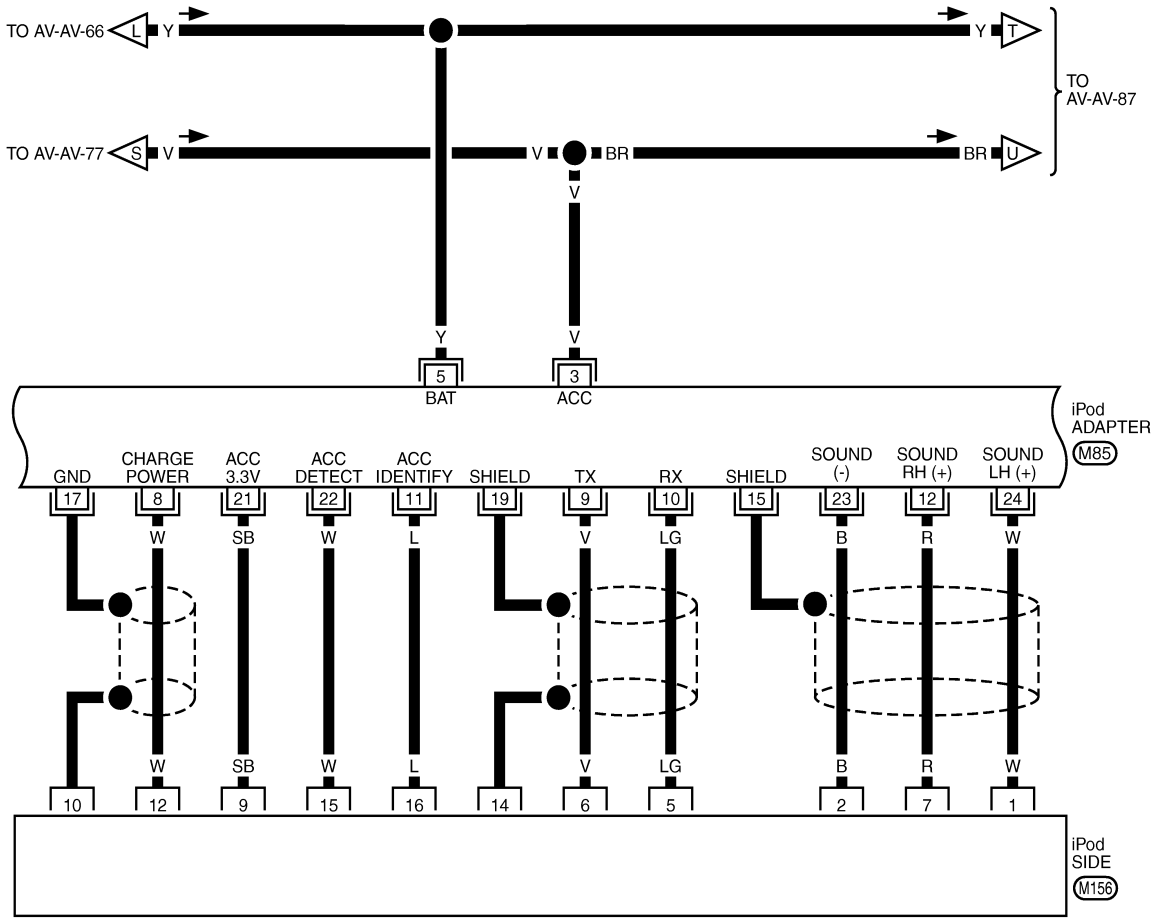
AV-AV-77

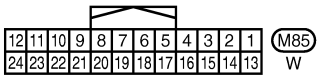


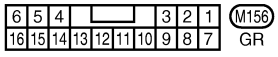


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8308E

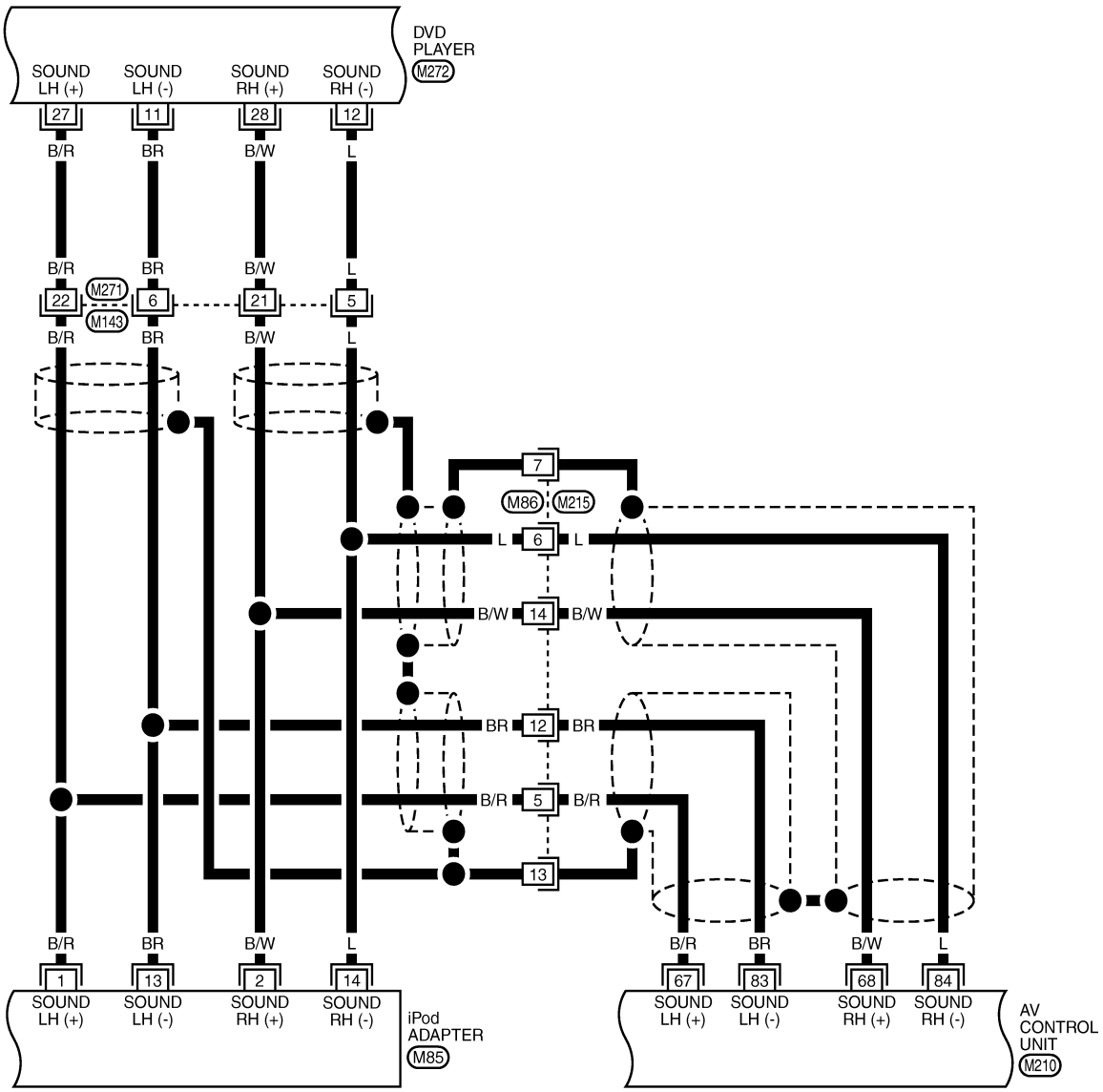

TO AV-AV-66
L
Y
Y
T
TO AV-AV-87
TO AV-AV-77
S
V
V
BR
BR
U
V
Y
V
5
BAT
3
ACC
iPod ADAPTER
M85
GND
CHARGE POWER
ACC 3.3V
ACC DETECT
ACC IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND (-)
SOUND RH (+)
SOUND LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod SIDE
M156

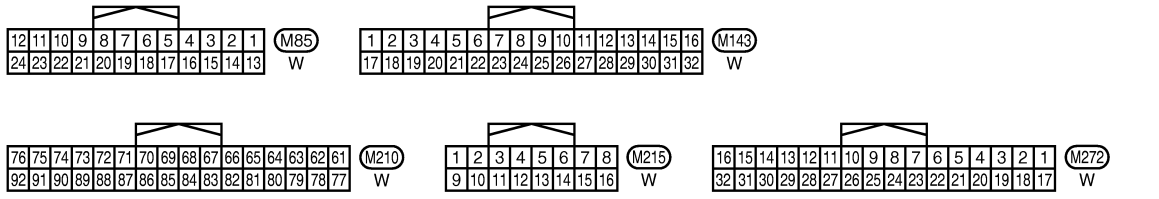

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6761E

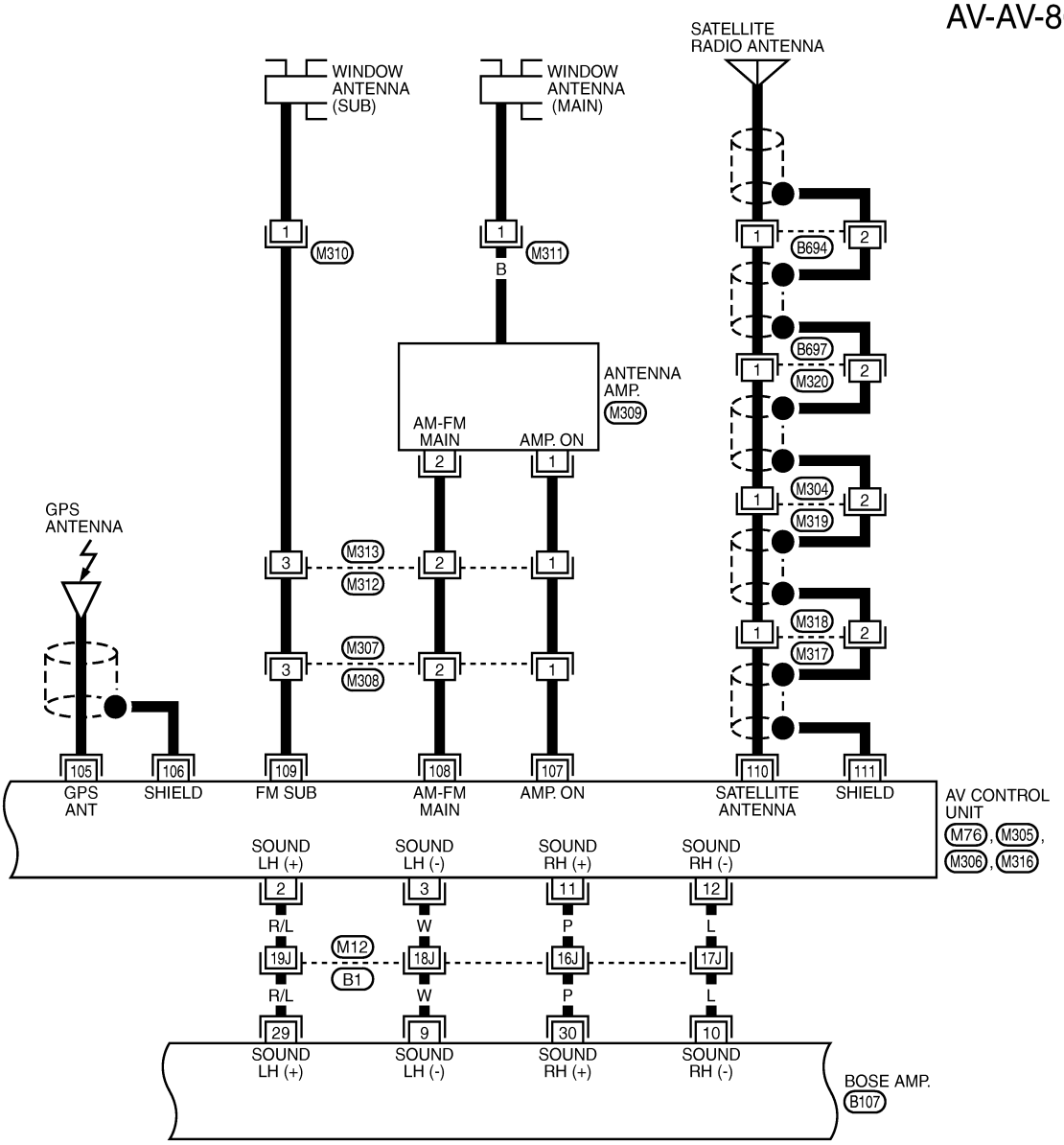
AV-AV-79

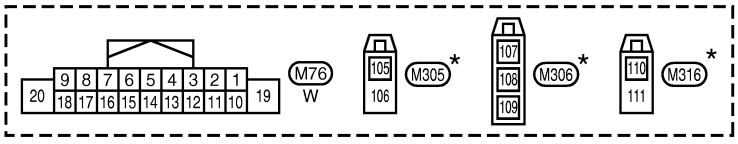




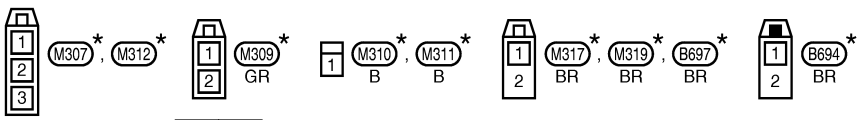
TKWT6762E

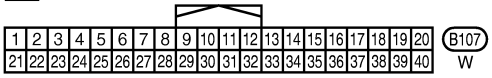
AV-AV-80





REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

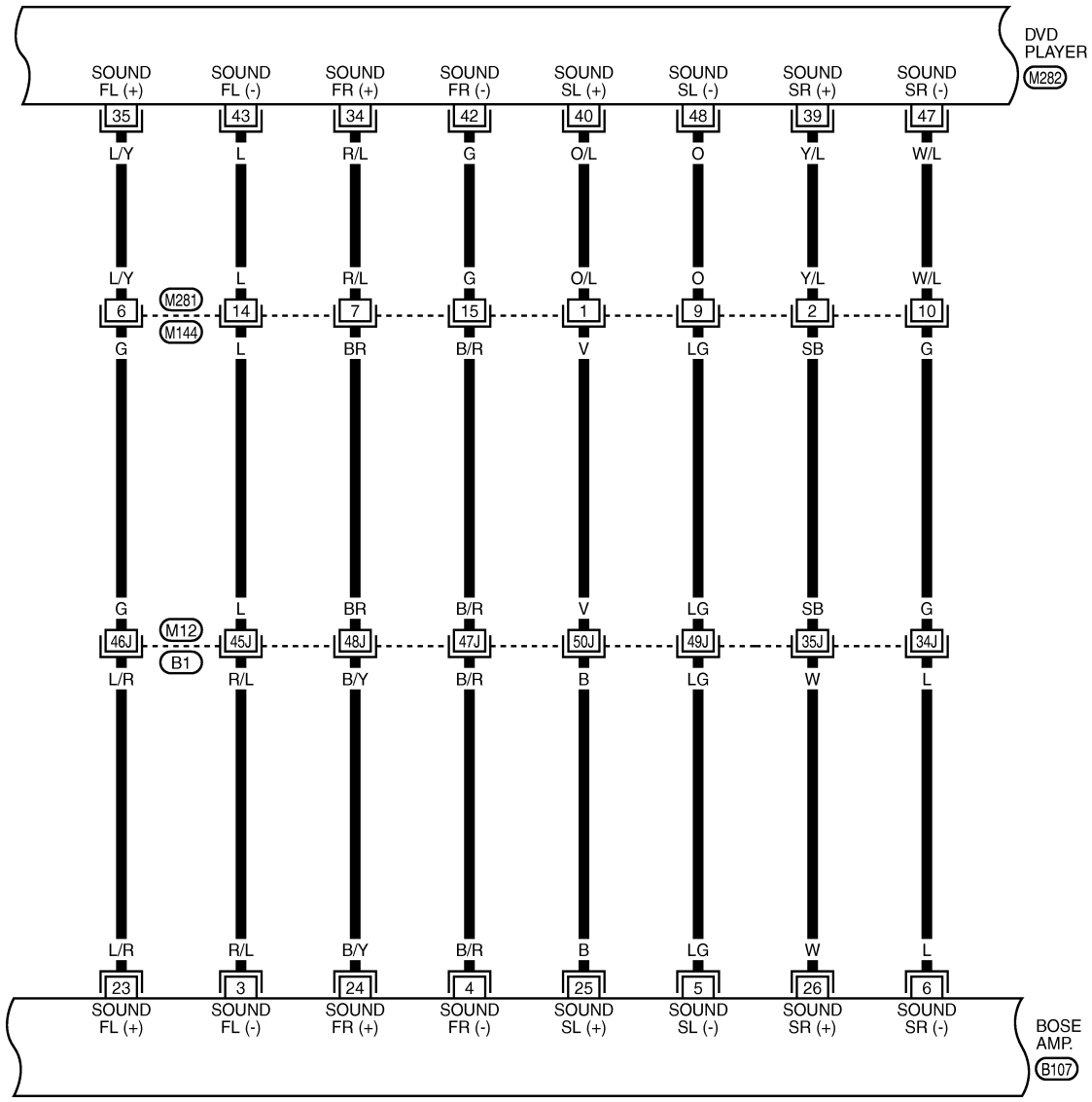


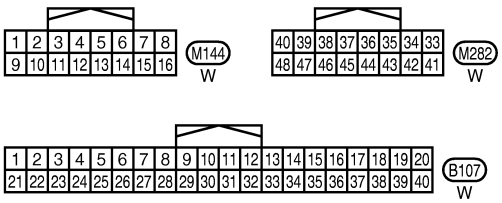


* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6763E

AV-AV-81

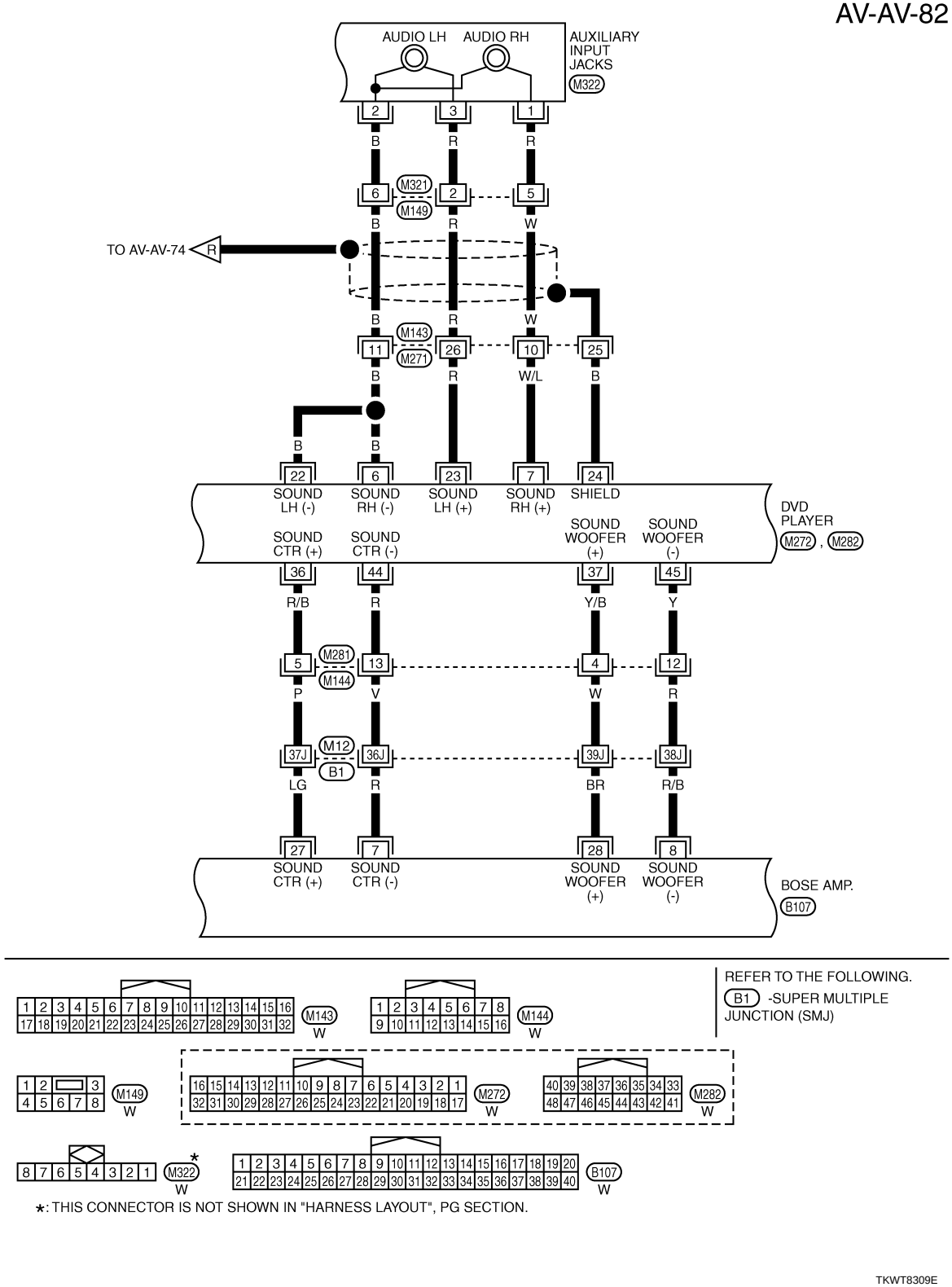




REFER TO THE FOLLOWING.
(B1) - SUPER MULTIPLE JUNCTION (SMJ)

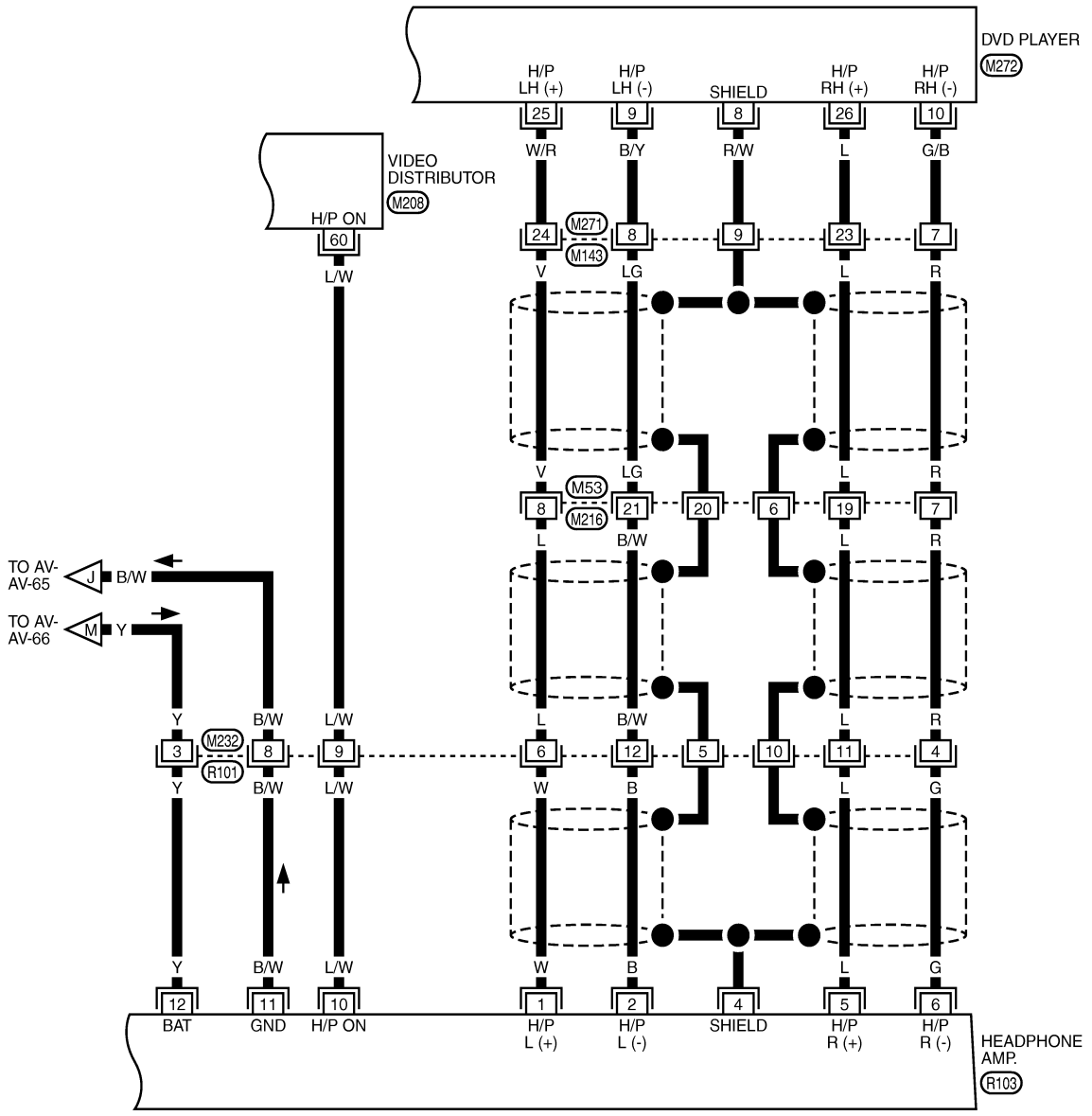
TKWT6764E

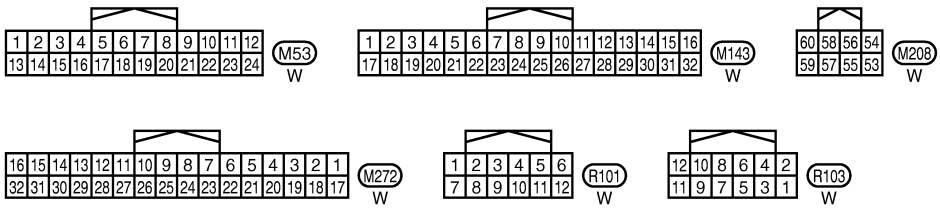
AV-AV-82



TKWT8309E

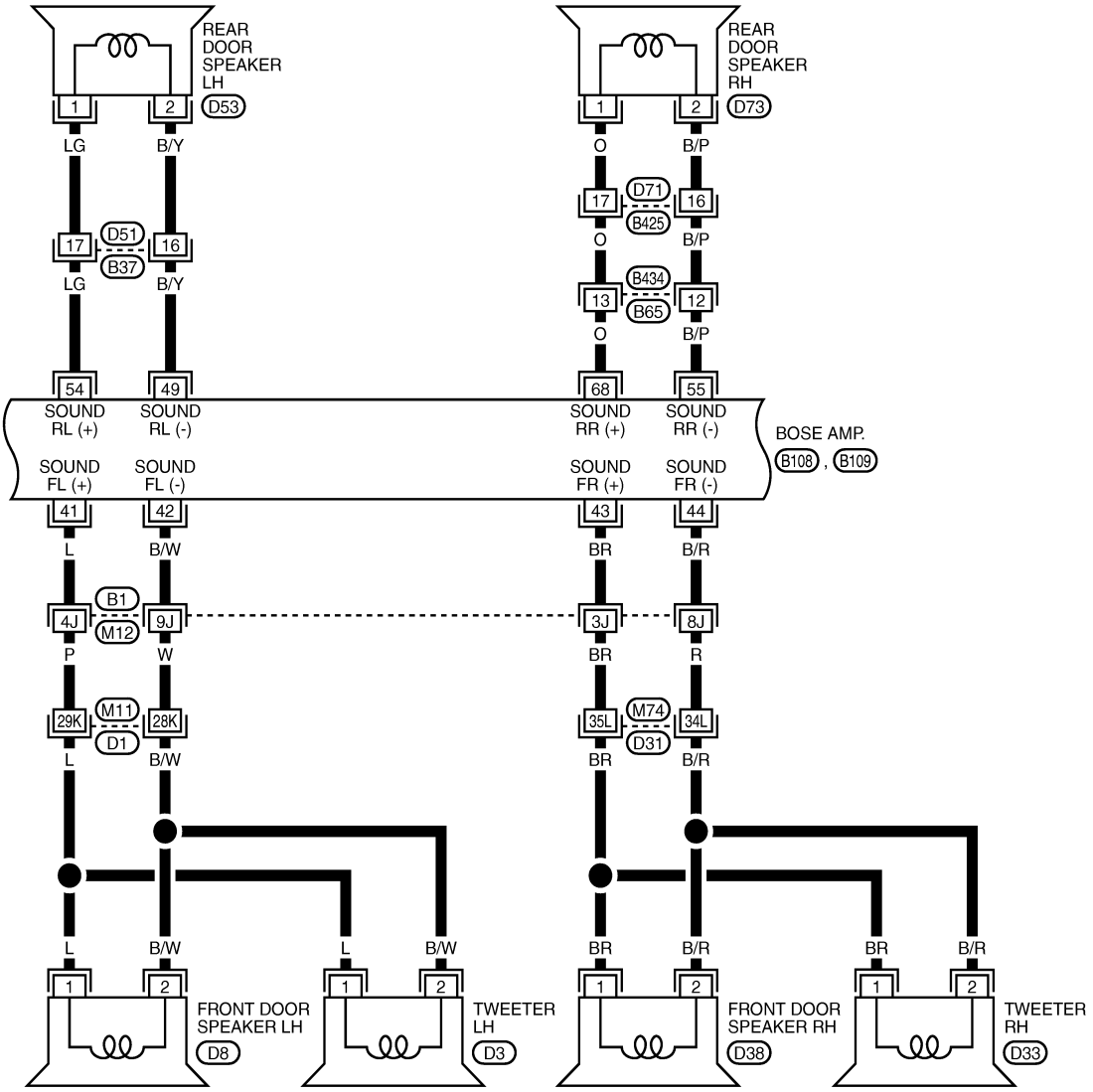
AV-AV-83

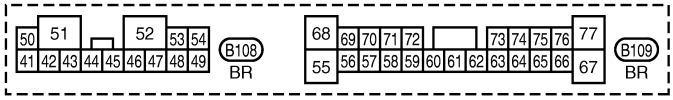


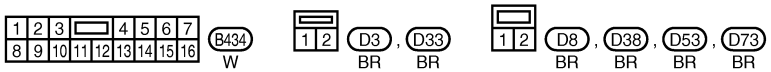


TKWT6766E

AV-AV-84

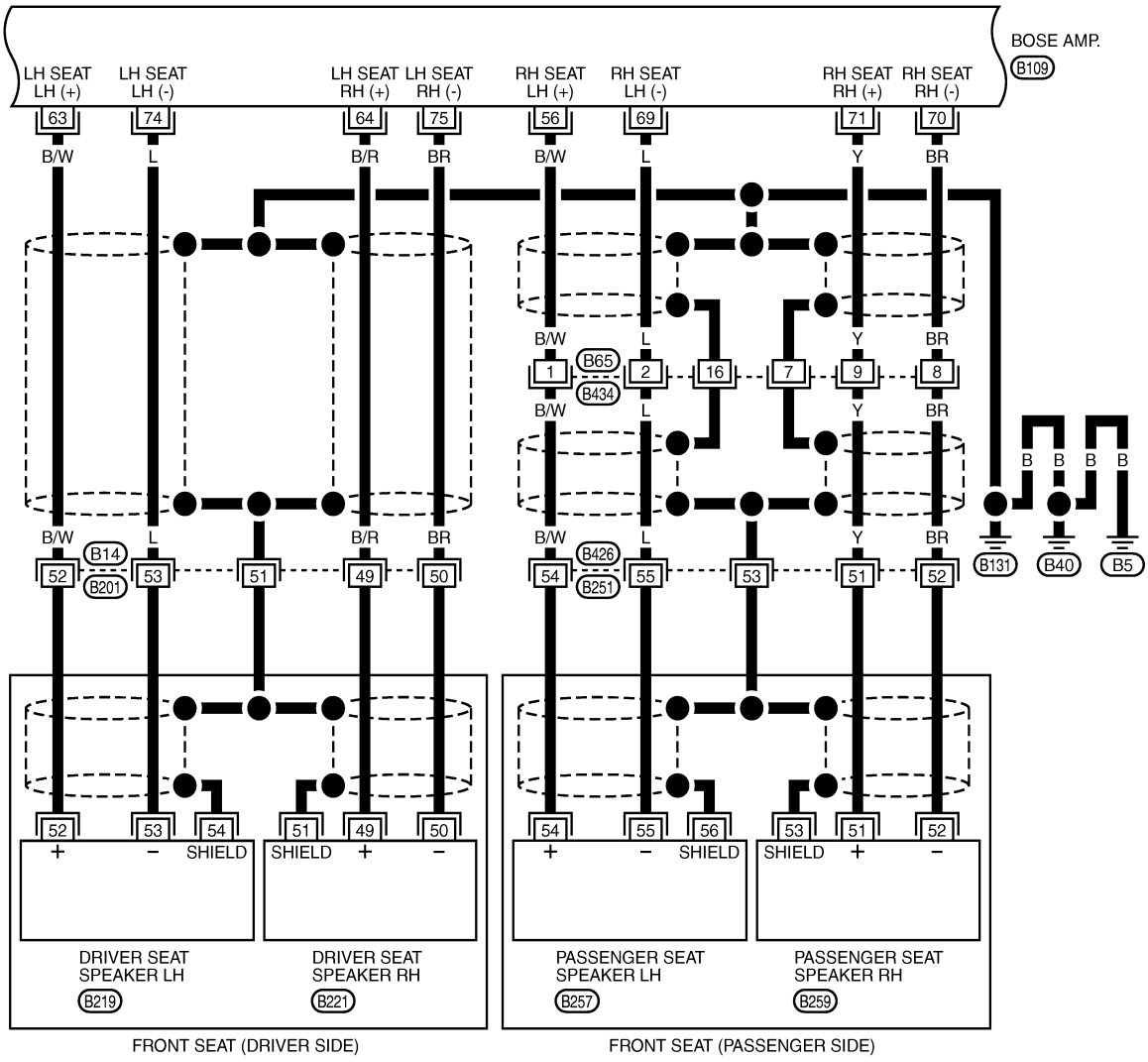


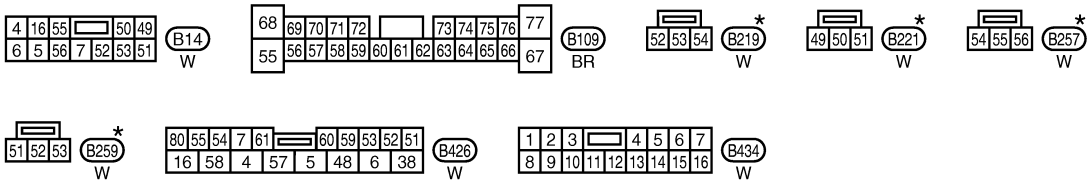




REFER TO THE FOLLOWING.
B1 , D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

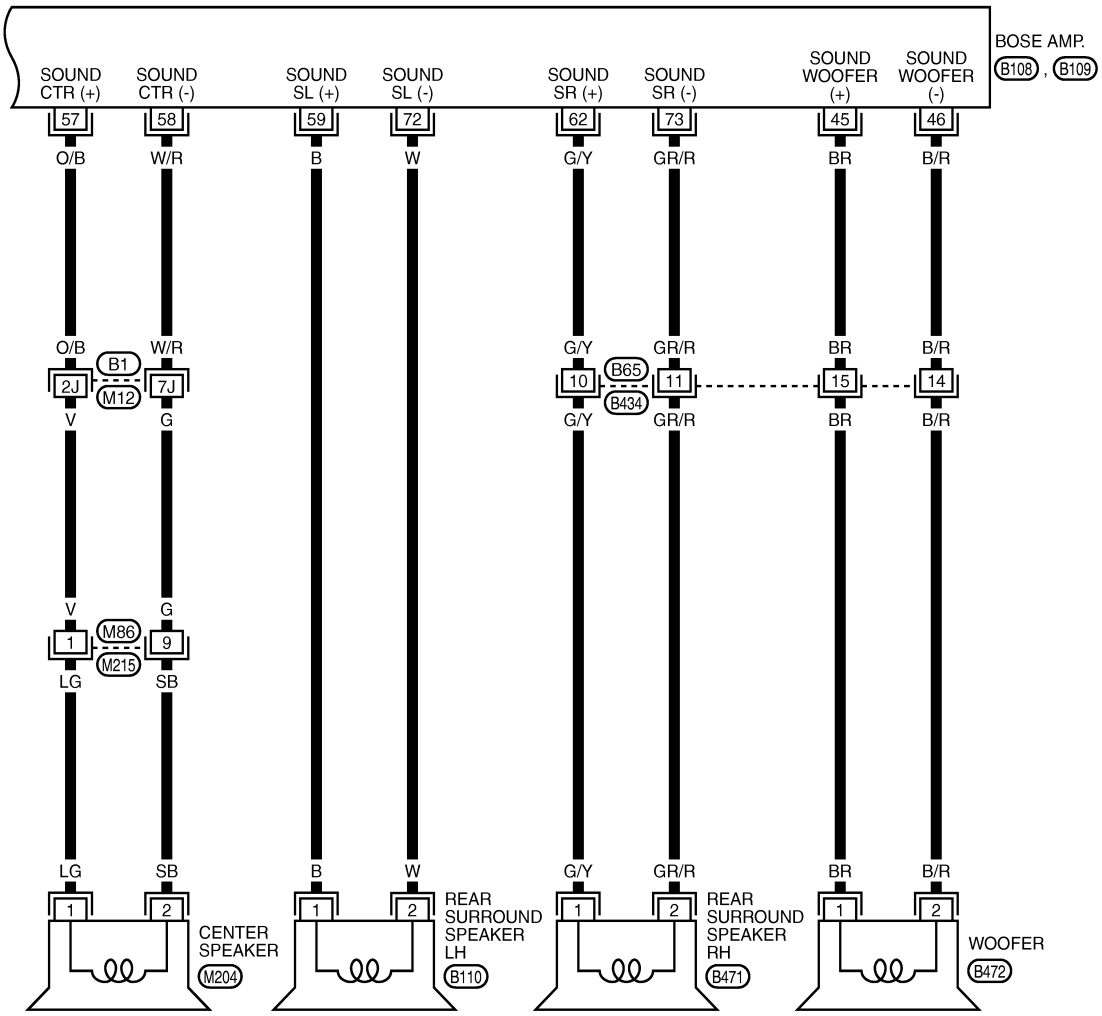
TKWT6767E

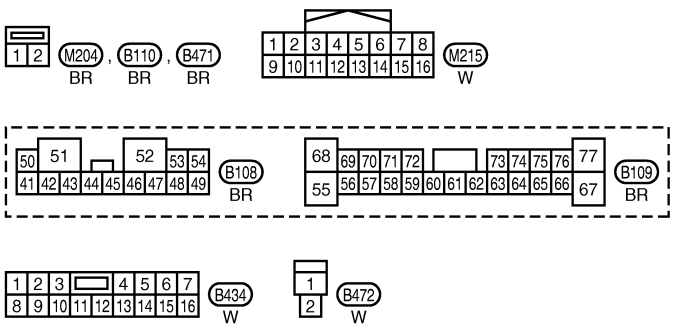




*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

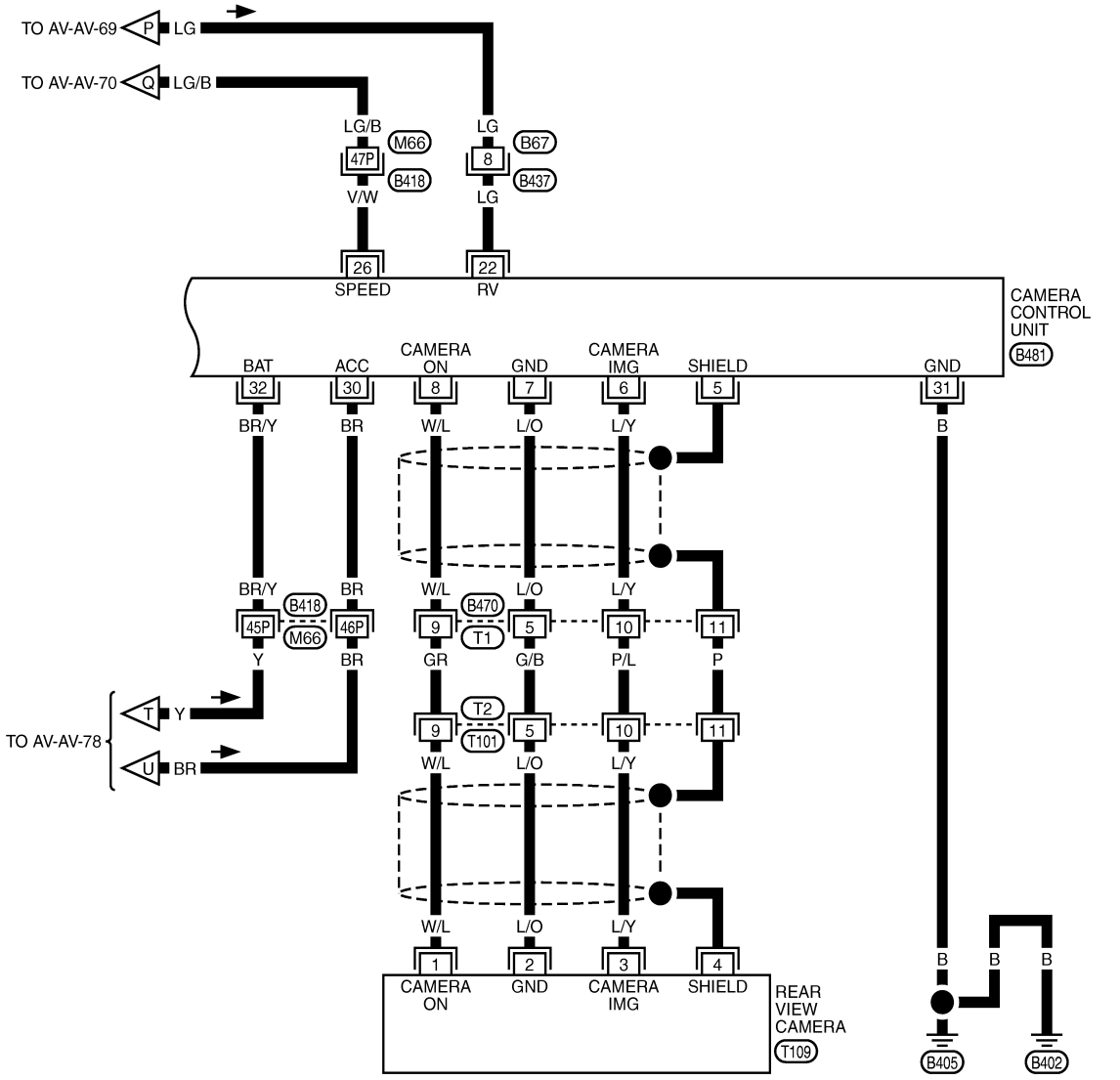
TKWT6768E

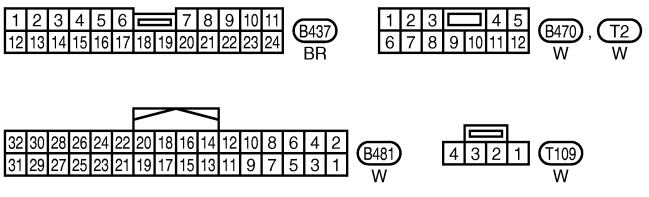




REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6769E





REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

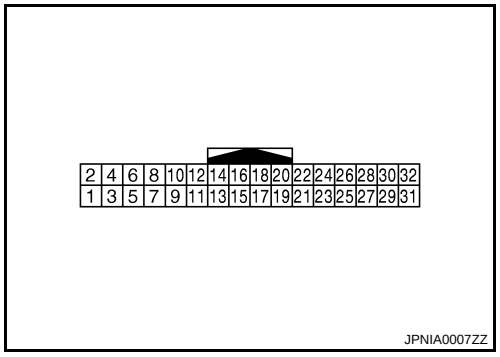
TKWT6770E

CAMERA CONTROL UNIT

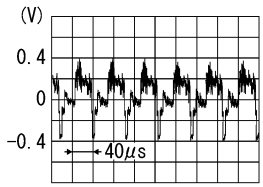
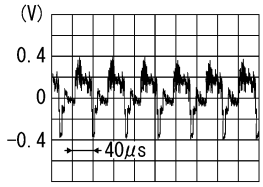
Reference Value

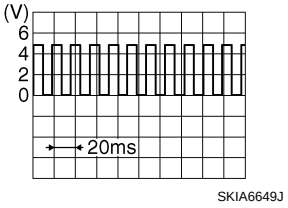
INFOID:0000000004156101

TERMINAL LAYOUT



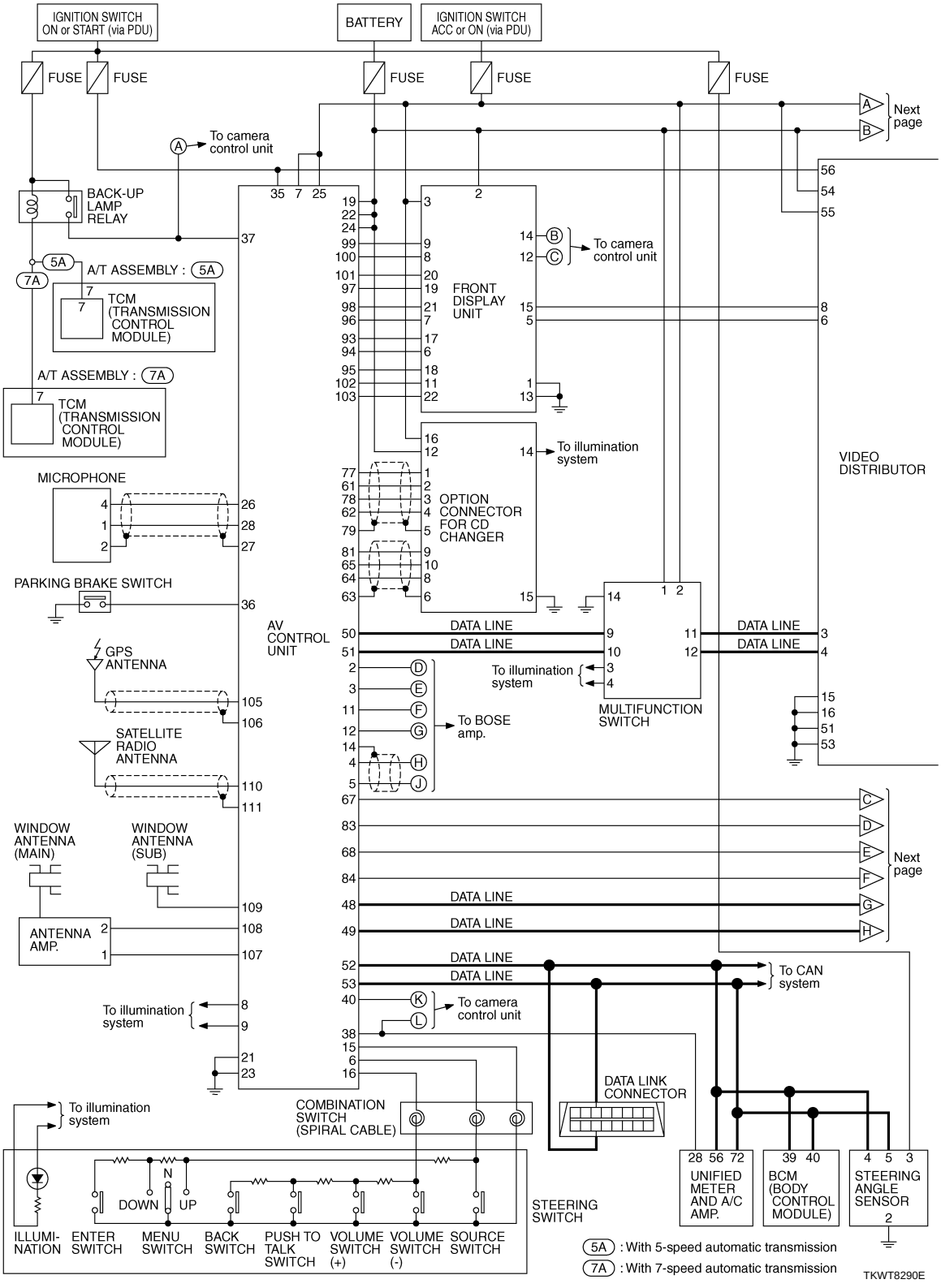
PHYSICAL VALUES

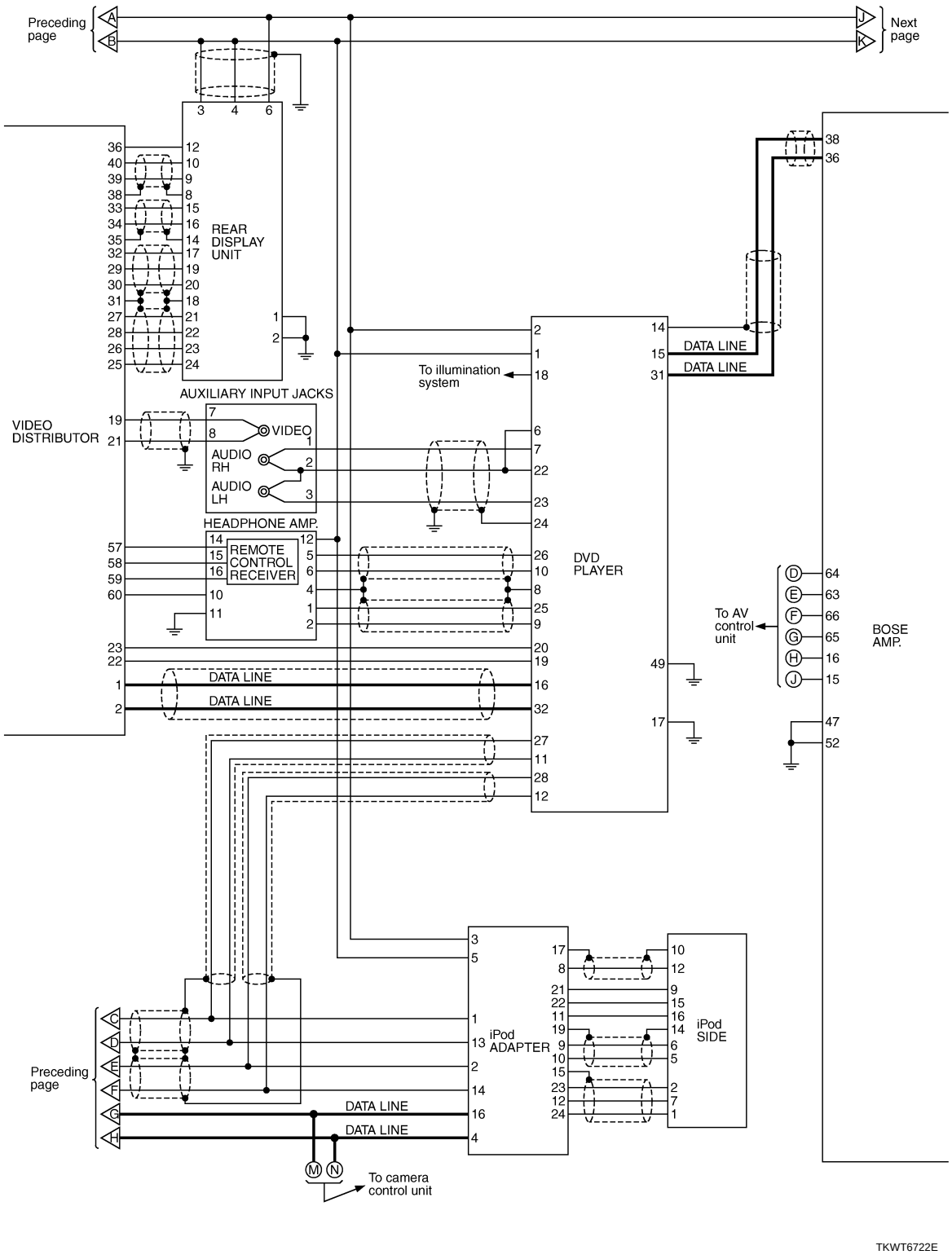
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
5	—	Shield	—	—	—	—
6 (L/Y)	Ground	Camera image signal	Input	Ignition switch ON	When rear view camera image is displayed.	 SKIB2251J
7 (L/O)	Ground	Rear view camera ground	—	Ignition switch ON	—	0 V
8 (W/L)	Ground	Camera ON signal	Output	Ignition switch ON	R position.	6 V
					Other than R position.	0 V
11	—	Shield	—	—	—	—
12 (Y)	Ground	Camera image signal	Output	Ignition switch ON	When rear view camera image is displayed.	 SKIB2251J
14 (V)	Ground	Camera-connection recognition signal	Output	Ignition switch ON	Connected to camera control unit connector.	0 V
					Not connected to camera control unit connector.	5 V
17 (G)	—	AV communication signal (L)	Input/ Output	—	—	—
18 (R)	—	AV communication signal (H)	Input/ Output	—	—	—
19 (R)	—	AV communication signal (L)	Input/ Output	—	—	—

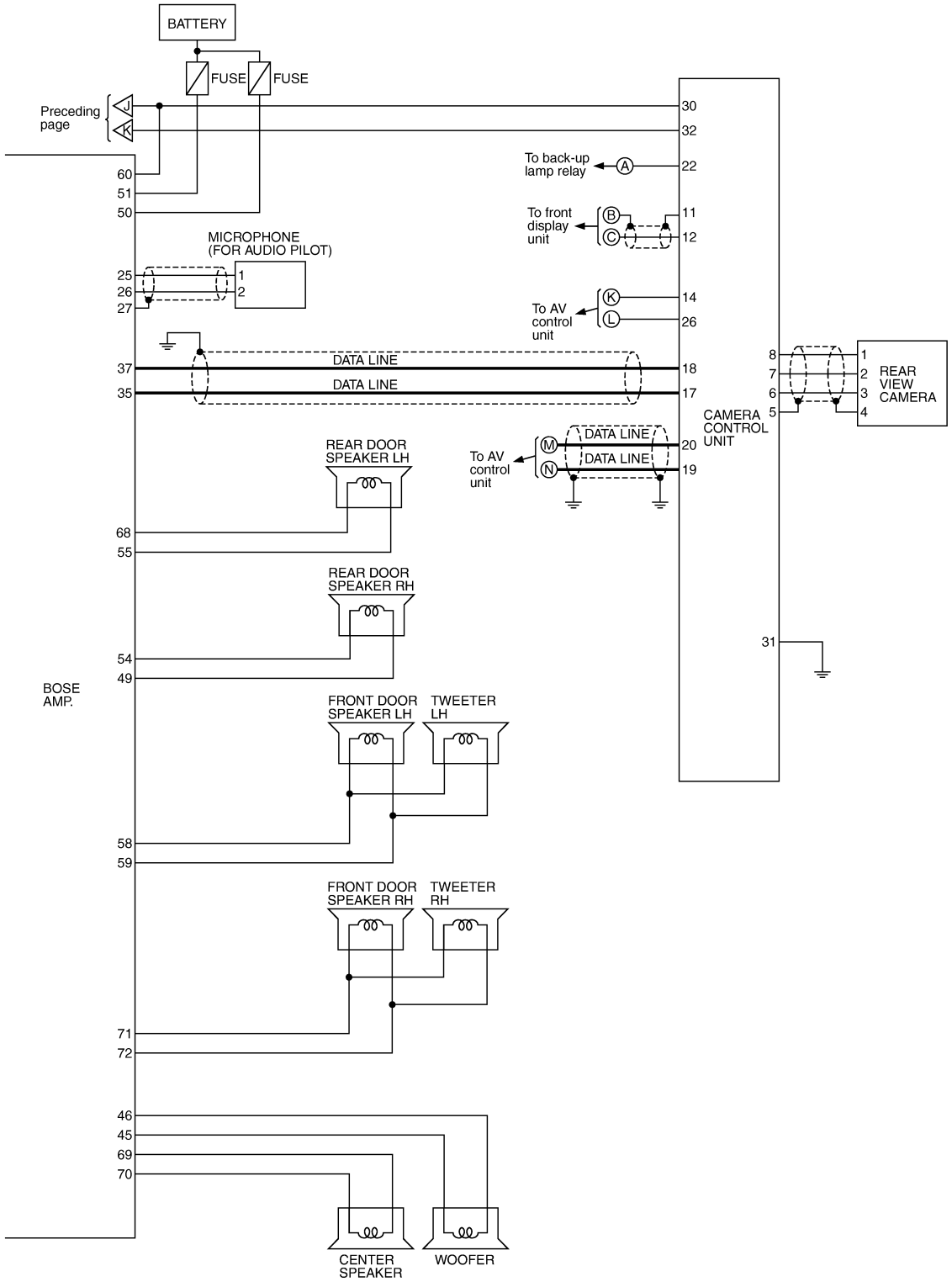
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
20 (W)	—	AV communication signal (H)	Input/ Output	—	—	—
22 (LG)	Ground	Reverse signal	Input	Ignition switch ON	R position.	12 V
					Other than R position.	0 V
26 (V/W)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH).	**NOTE:** Maximum voltage may be 12 V due to specifications (connected units).  SKIA6649J
30 (BR)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
31 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
32 (BR/Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage

Schematic - BOSE Audio 2ch System-

INFOID:0000000004391614




Preceding page
Next page
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
To illumination system
DVD PLAYER
DATA LINE
DATA LINE
DATA LINE
DATA LINE
To AV control unit
BOSE AMP.
iPod ADAPTER
iPod SIDE
Preceding page
DATA LINE
DATA LINE
To camera control unit
TKWT6722E



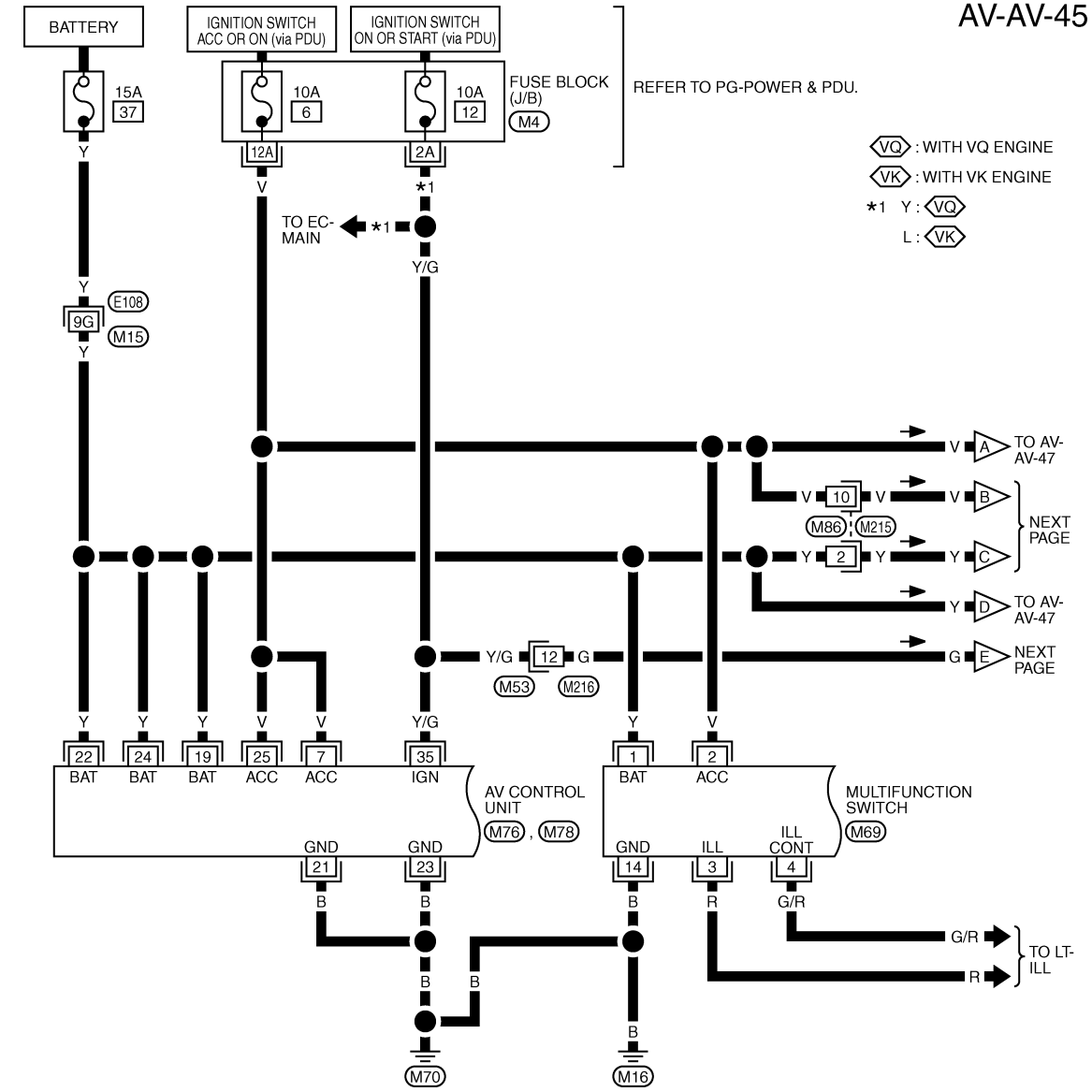
TKWT6723E

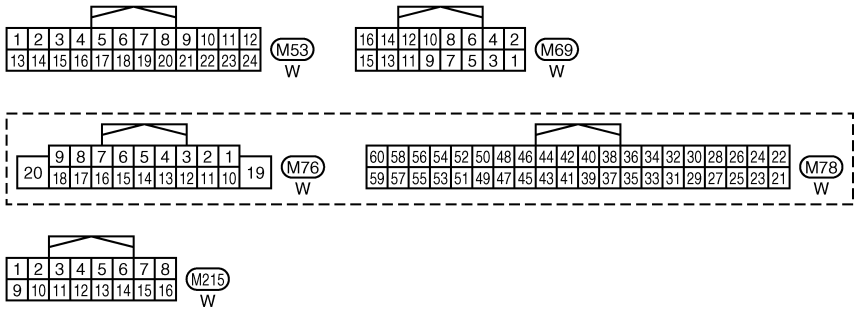
Wiring Diagram - AV - / BOSE Audio 2ch System

INFOID:0000000004391615

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

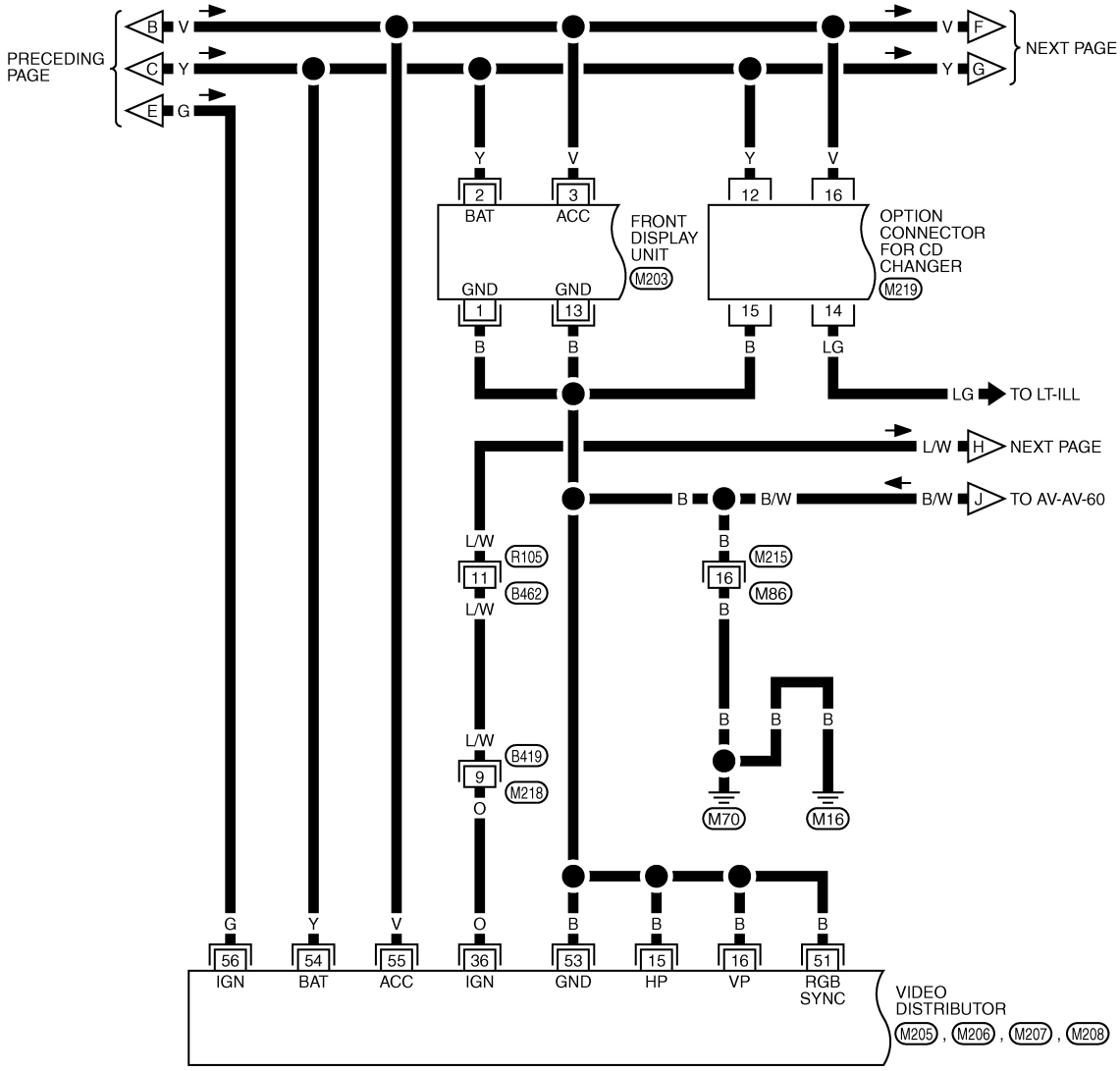


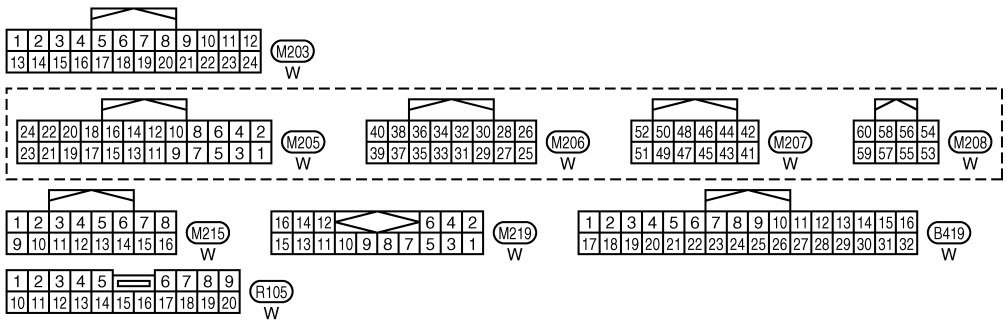


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8291E

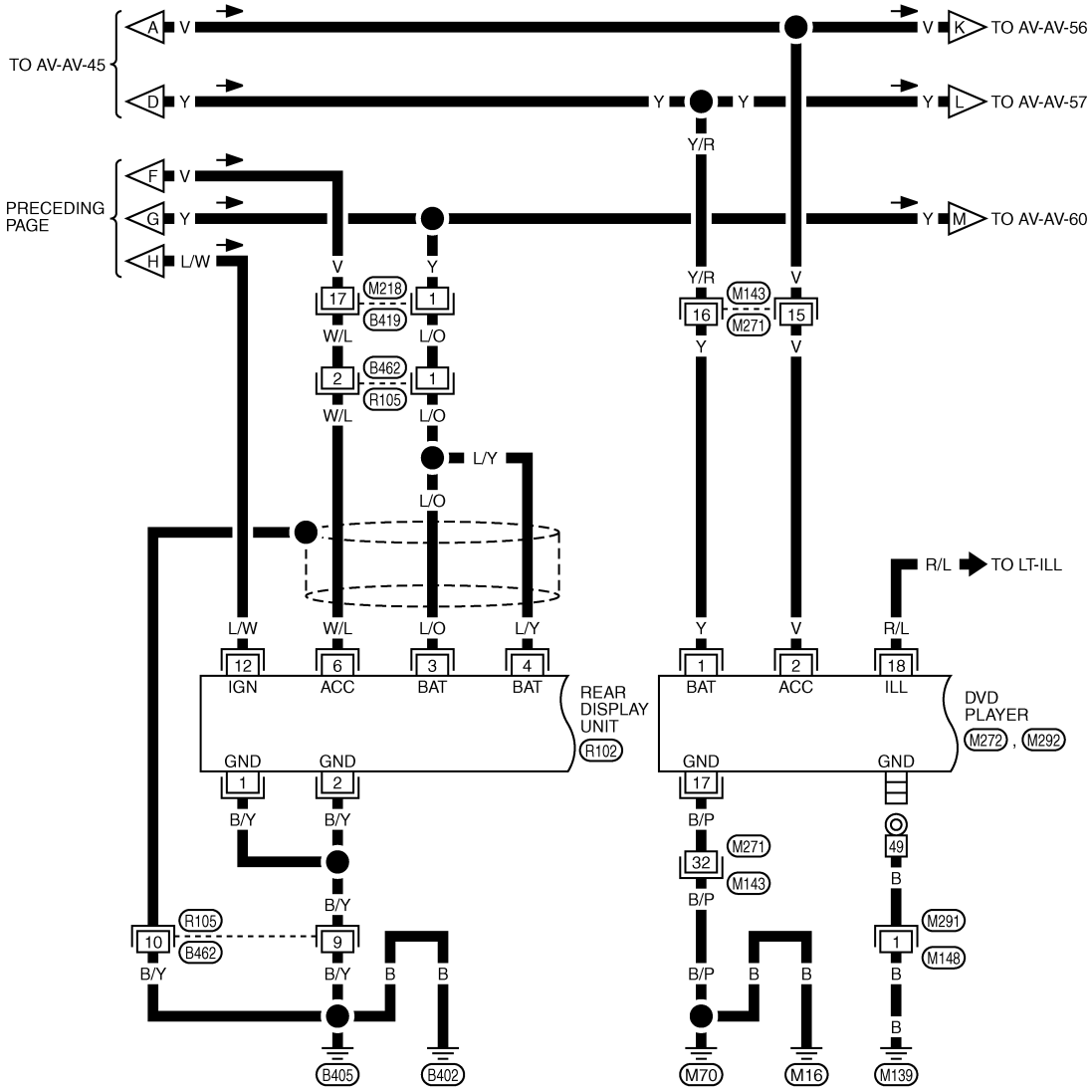
AV-AV-46

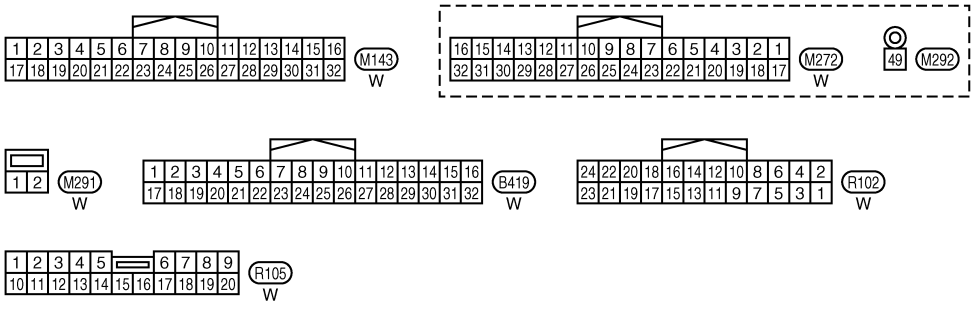




TKWT8292E

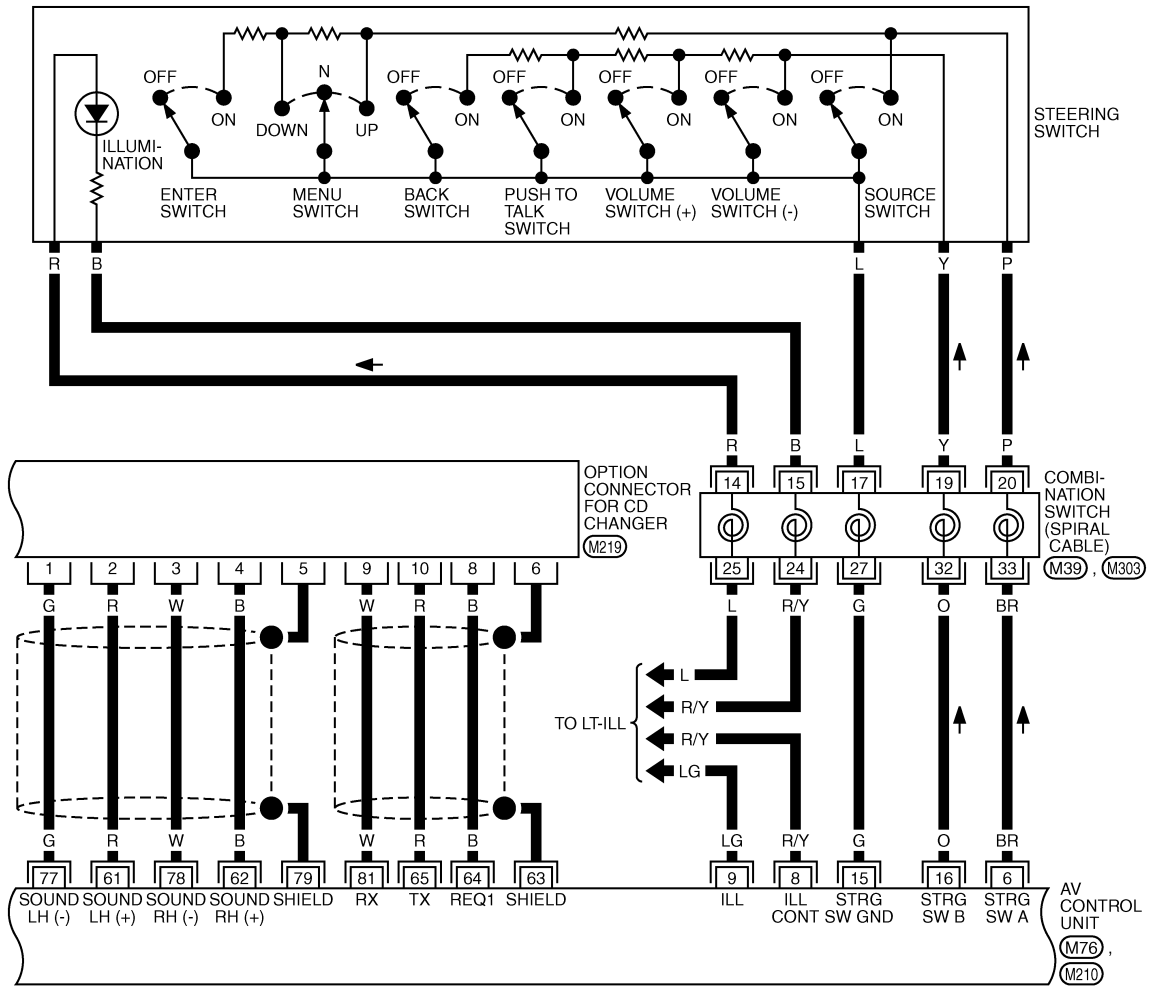
AV-AV-47

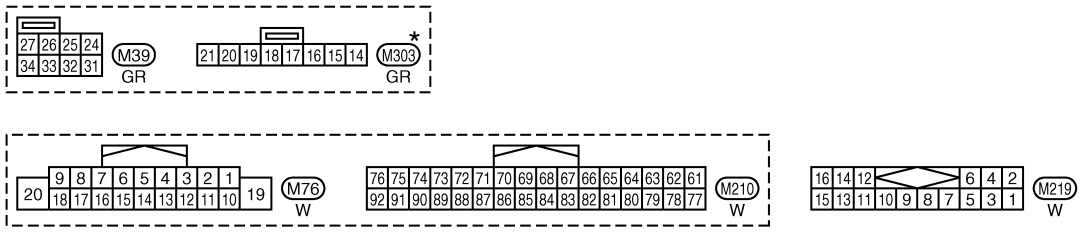




TKWT8293E

AV-AV-48

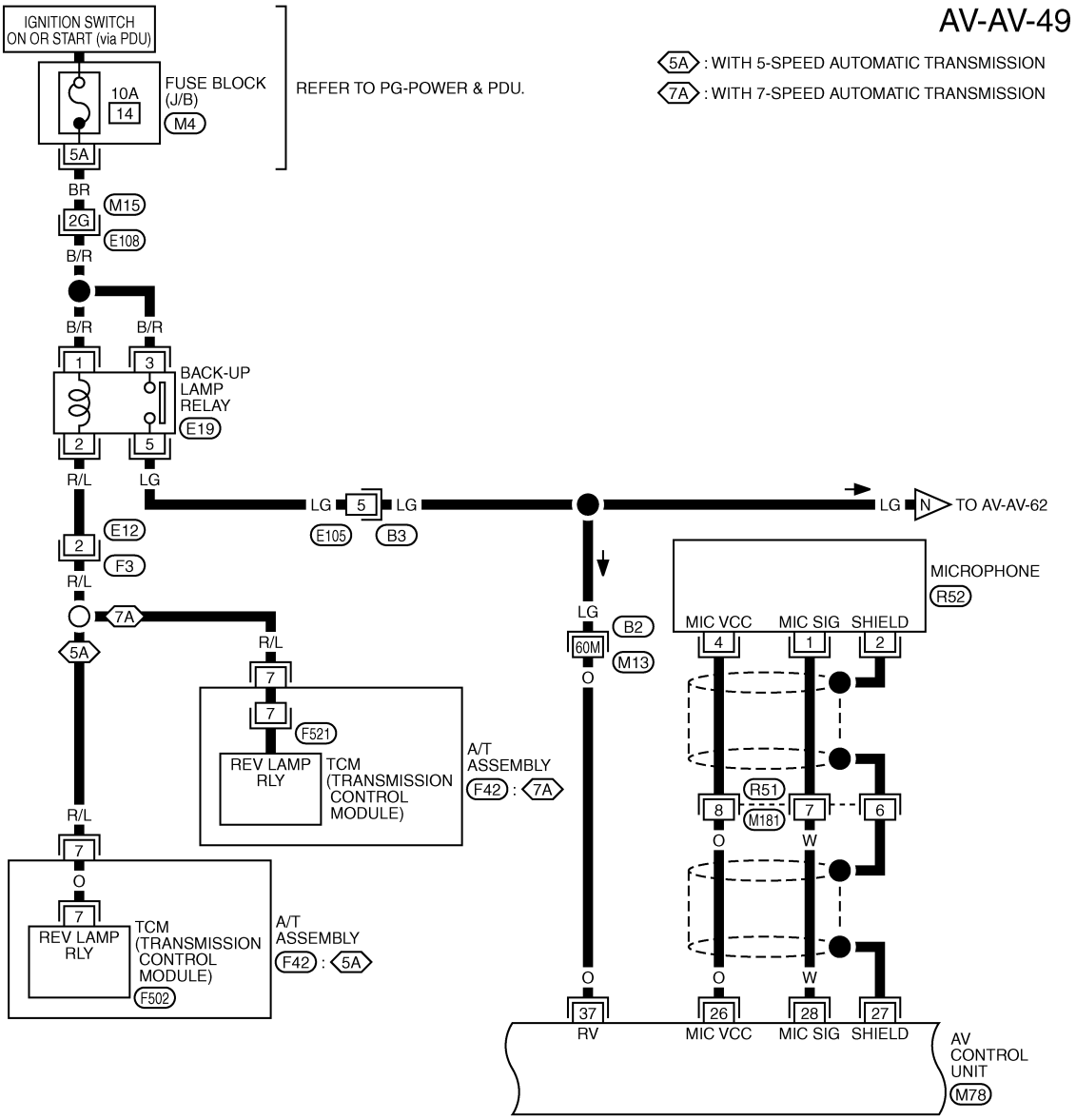


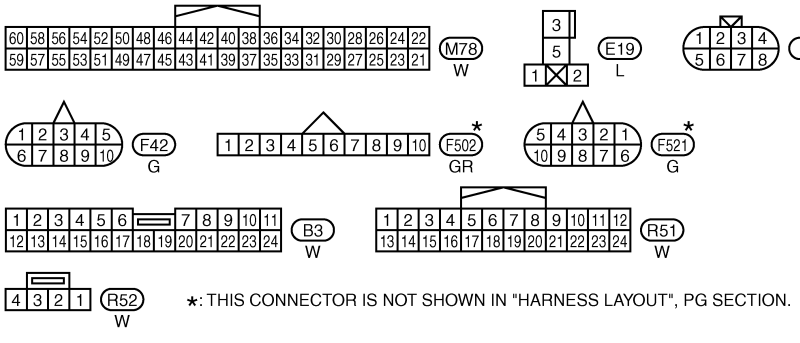


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8294E

AV-AV-49

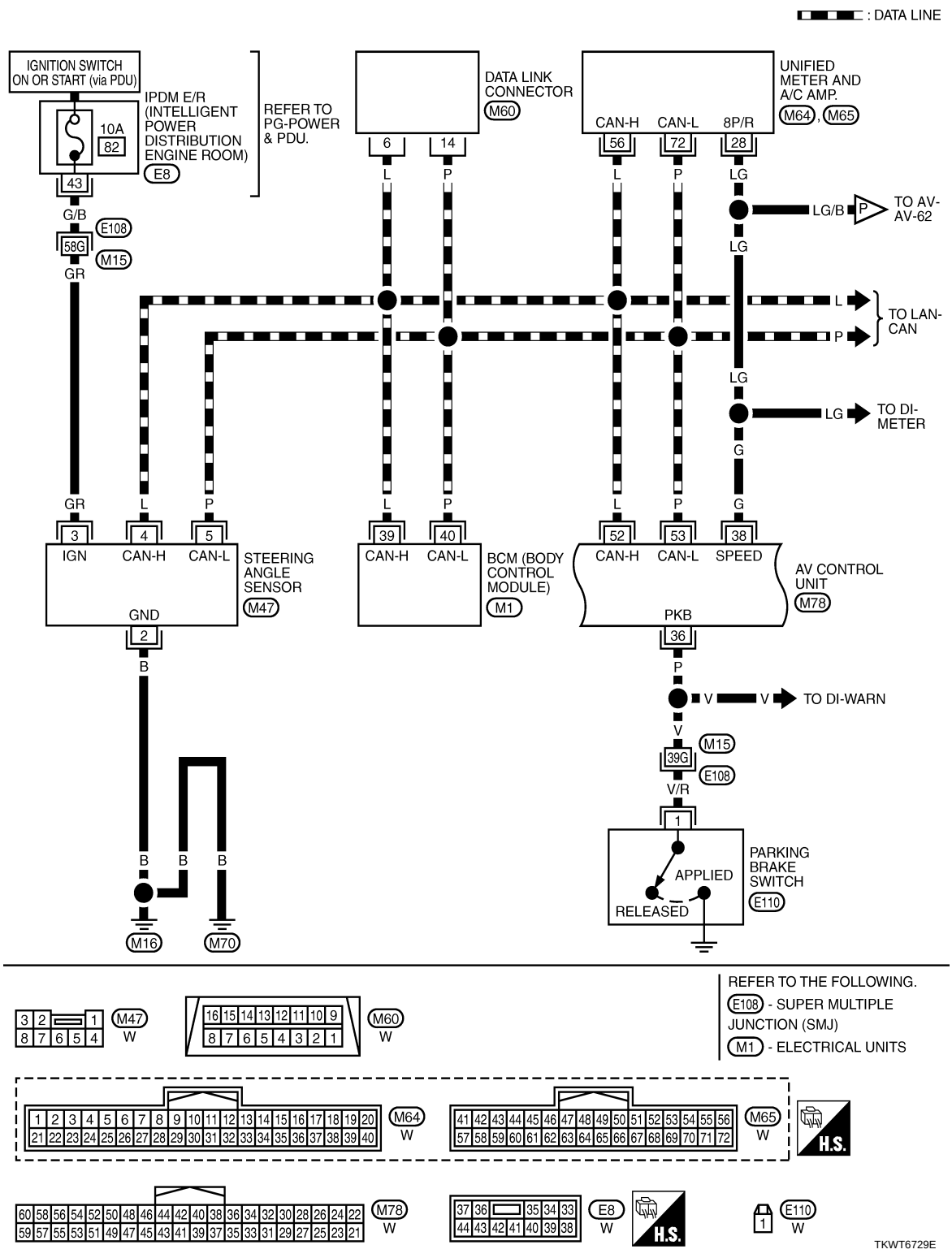




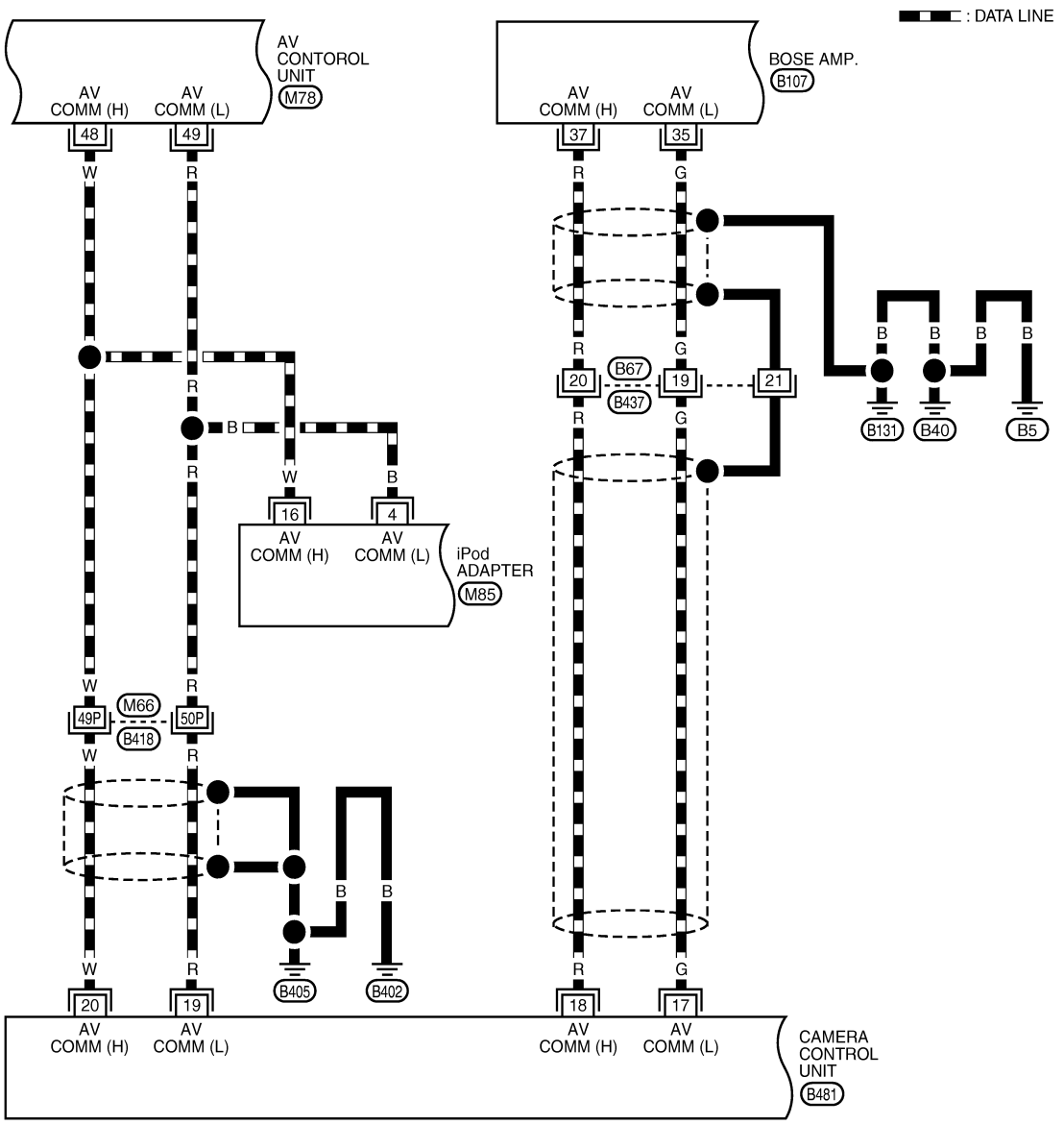
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

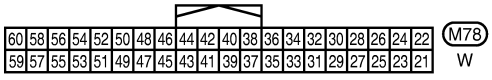
TKWT8295E

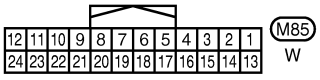
AV-AV-50

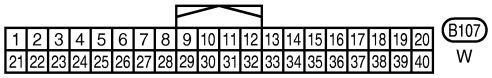

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
G/B
E108
58G
M15
GR
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6 14
L P
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56 72 28
L P LG
LG/B P TO AV-AV-62
LG
L TO LAN-CAN
P
LG
LG TO DI-METER
G
GR L P L P L P G
3 4 5 39 40 52 53 38
IGN CAN-H CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
CAN-H CAN-L
BCM (BODY CONTROL MODULE) M1
CAN-H CAN-L SPEED
AV CONTROL UNIT M78
PKB
36
P
V V TO DI-WARN
V
M15
39G
E108
V/R
1
APPLIED
RELEASED
PARKING BRAKE SWITCH E110
B B B
M16 M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47 W
M60 W
M64 W
M65 W
H.S.
M78 W
E8 W
E110 W
TKWT6729E

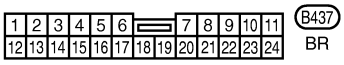
AV-AV-51

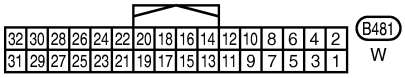








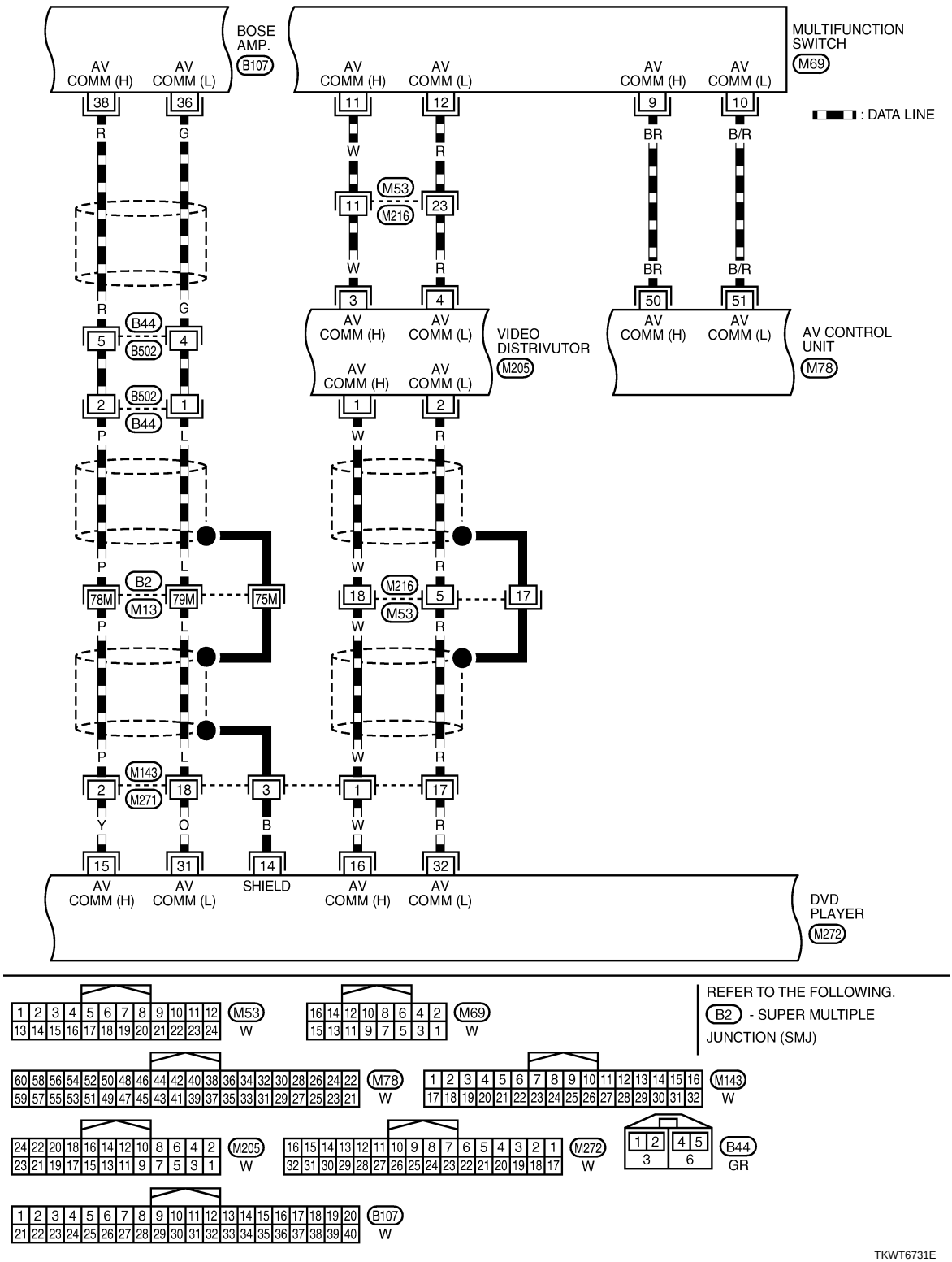




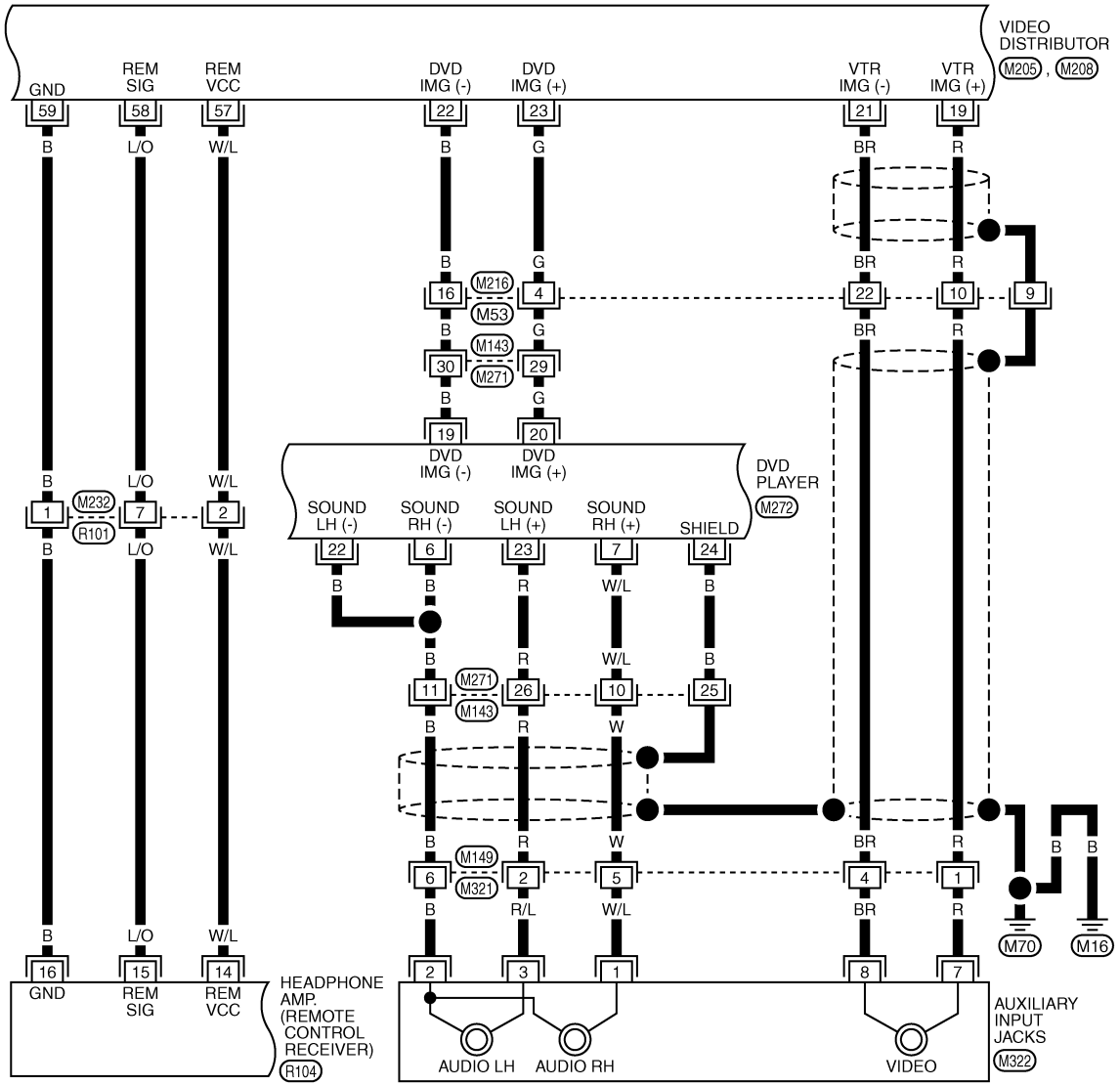
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

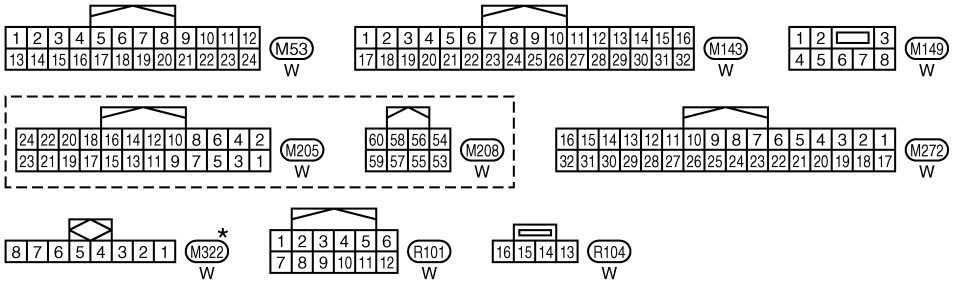
TKWT6730E

AV-AV-52


BOSE AMP. B107
MULTIFUNCTION SWITCH M69
: DATA LINE
VIDEO DISTRIVUTOR M205
AV CONTROL UNIT M78
DVD PLAYER M272
AV COMM (H)
AV COMM (L)
SHIELD
B44
B502
B2
M13
M53
M216
M143
M271
75M
78M
79M
REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)
M53 W
M69 W
M78 W
M143 W
M205 W
M272 W
B44 GR
B107 W
TKWT6731E

AV-AV-53

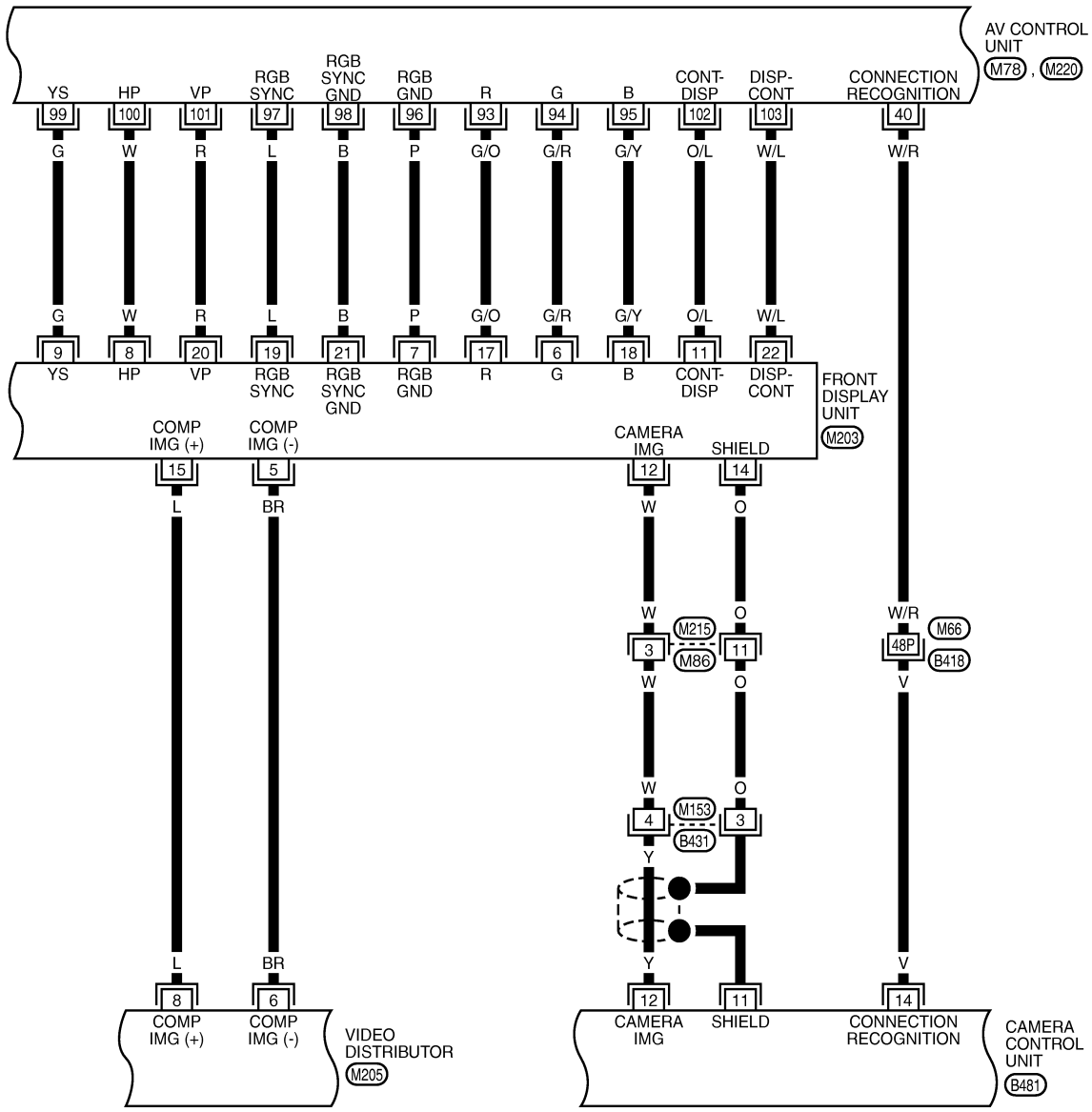


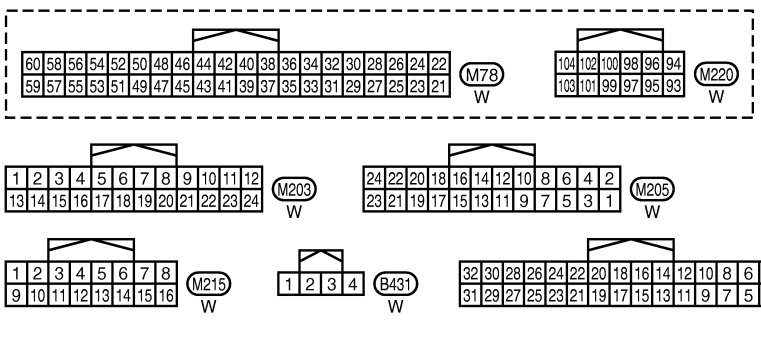


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8296E

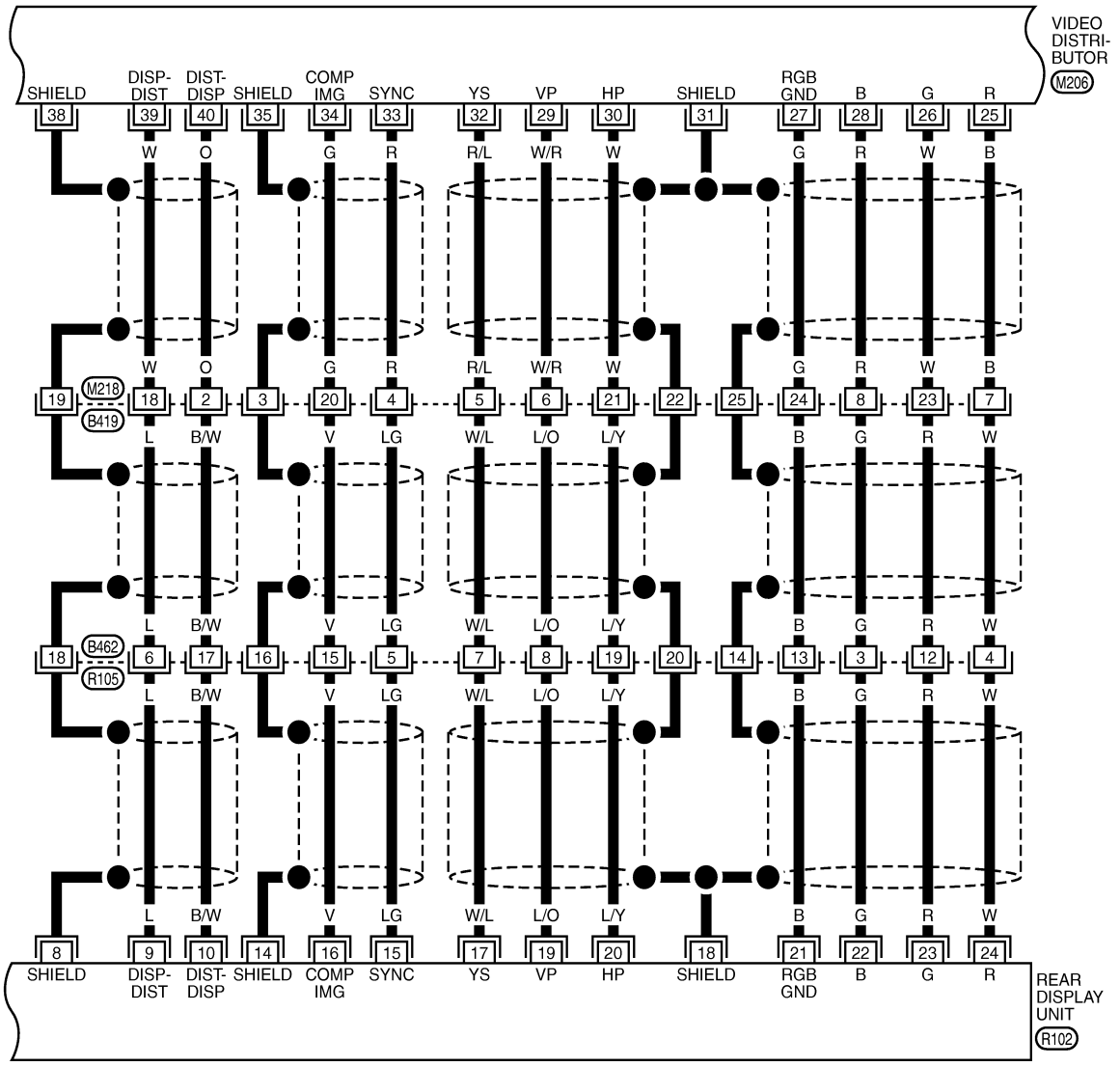
AV-AV-54

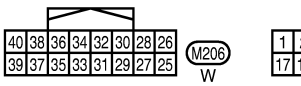


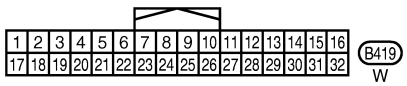


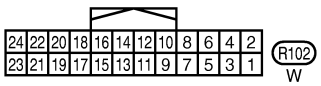
REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

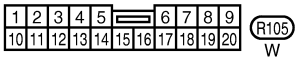
TKWT6733E


VIDEO DISTRI-BUTOR
M206
SHIELD 38
DISP-DIST 39
DIST-DISP 40
SHIELD 35
COMP IMG 34
SYNC 33
YS 32
VP 29
HP 30
SHIELD 31
RGB GND 27
B 28
G 26
R 25
W O G R R/L W/R W G R W B
M218
B419
B462
R105
L B/W V LG W/L L/O L/Y B G R W
SHIELD 8
DISP-DIST 9
DIST-DISP 10
SHIELD 14
COMP IMG 16
SYNC 15
YS 17
VP 19
HP 20
SHIELD 18
RGB GND 21
B 22
G 23
R 24
REAR DISPLAY UNIT
R102


M206
W

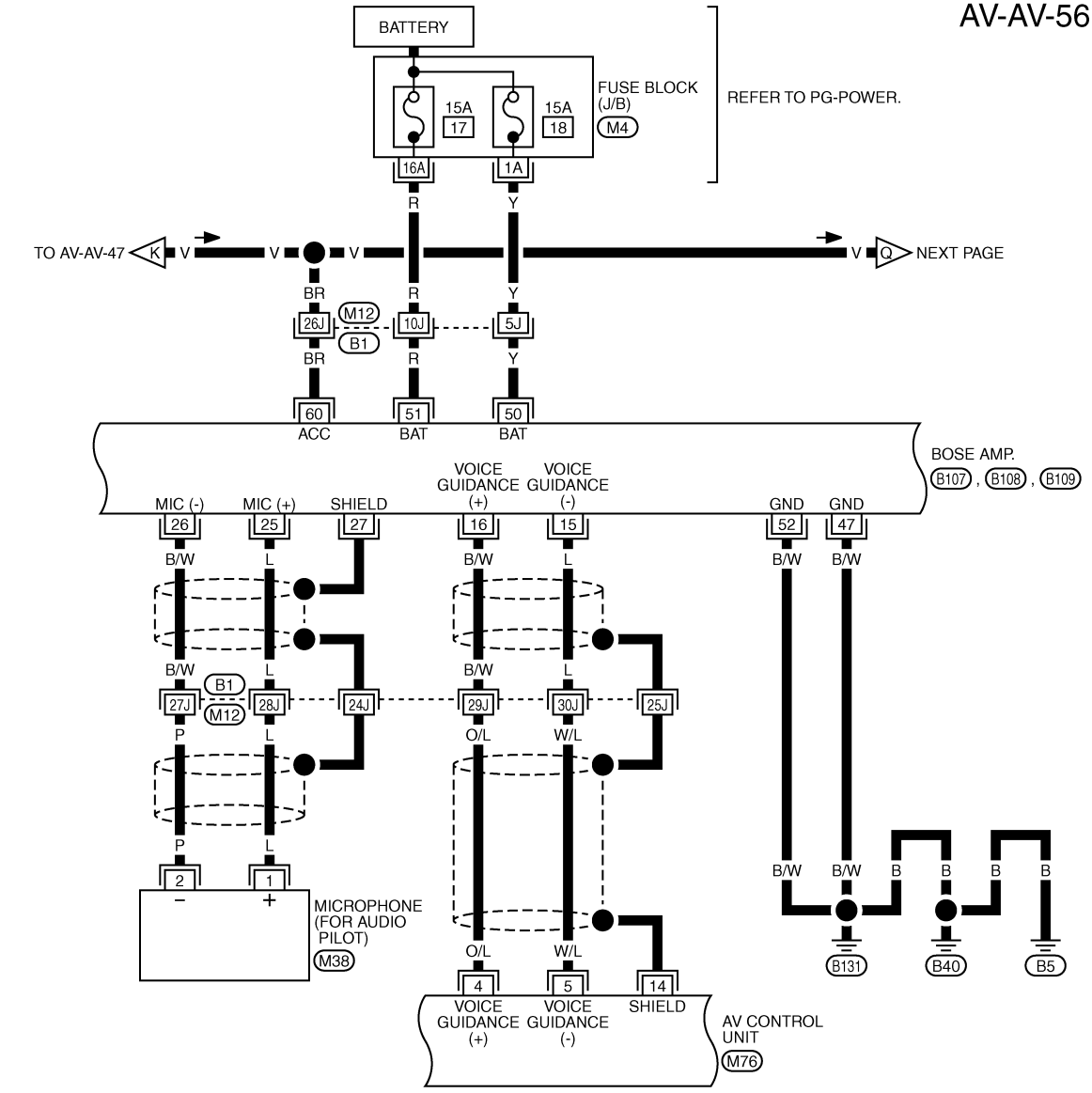

B419
W

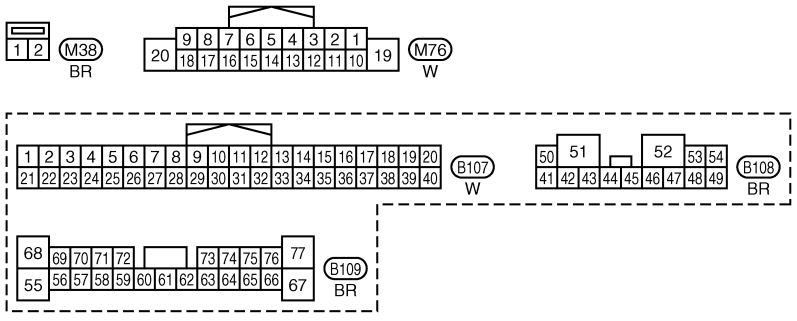

R102
W


R105
W

TKWT6734E

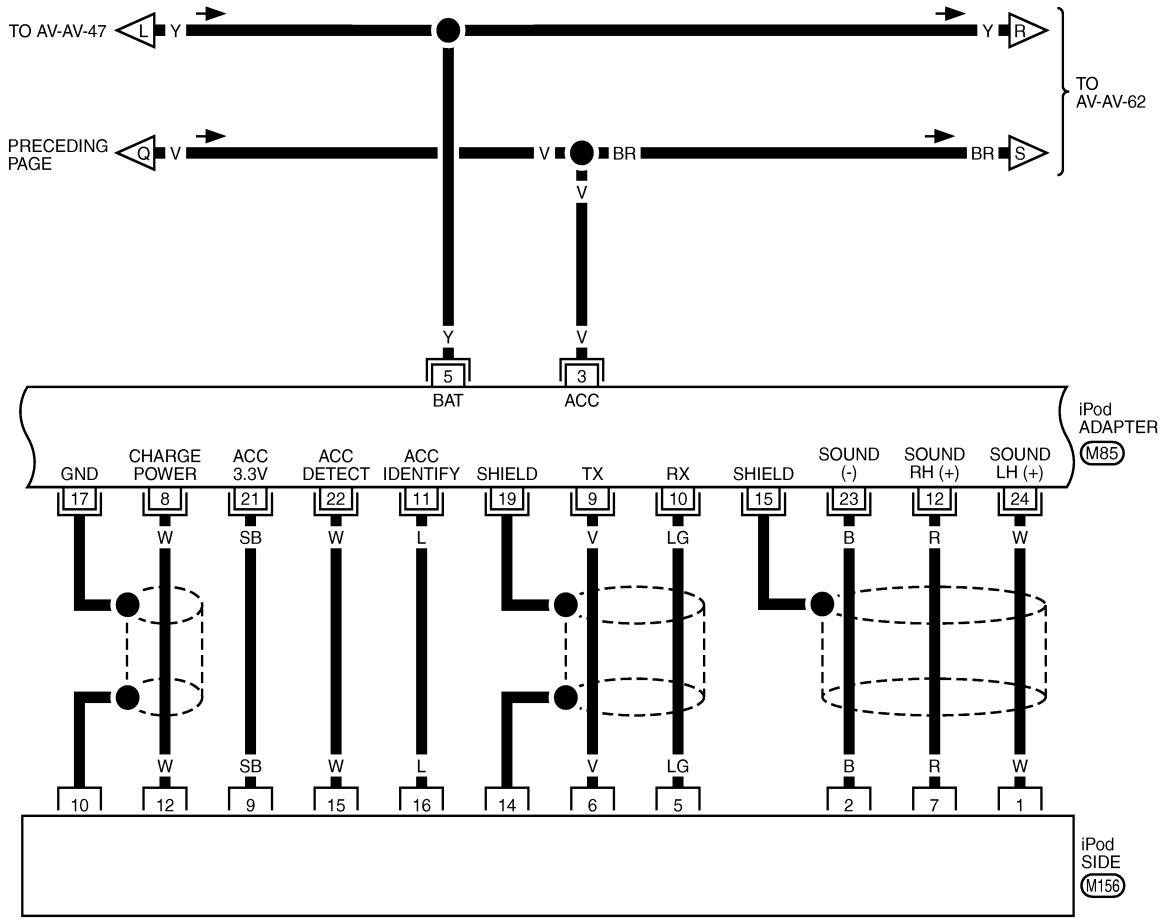
AV-AV-56

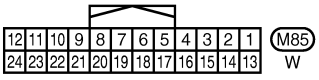


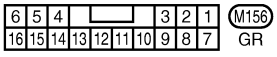


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8297E

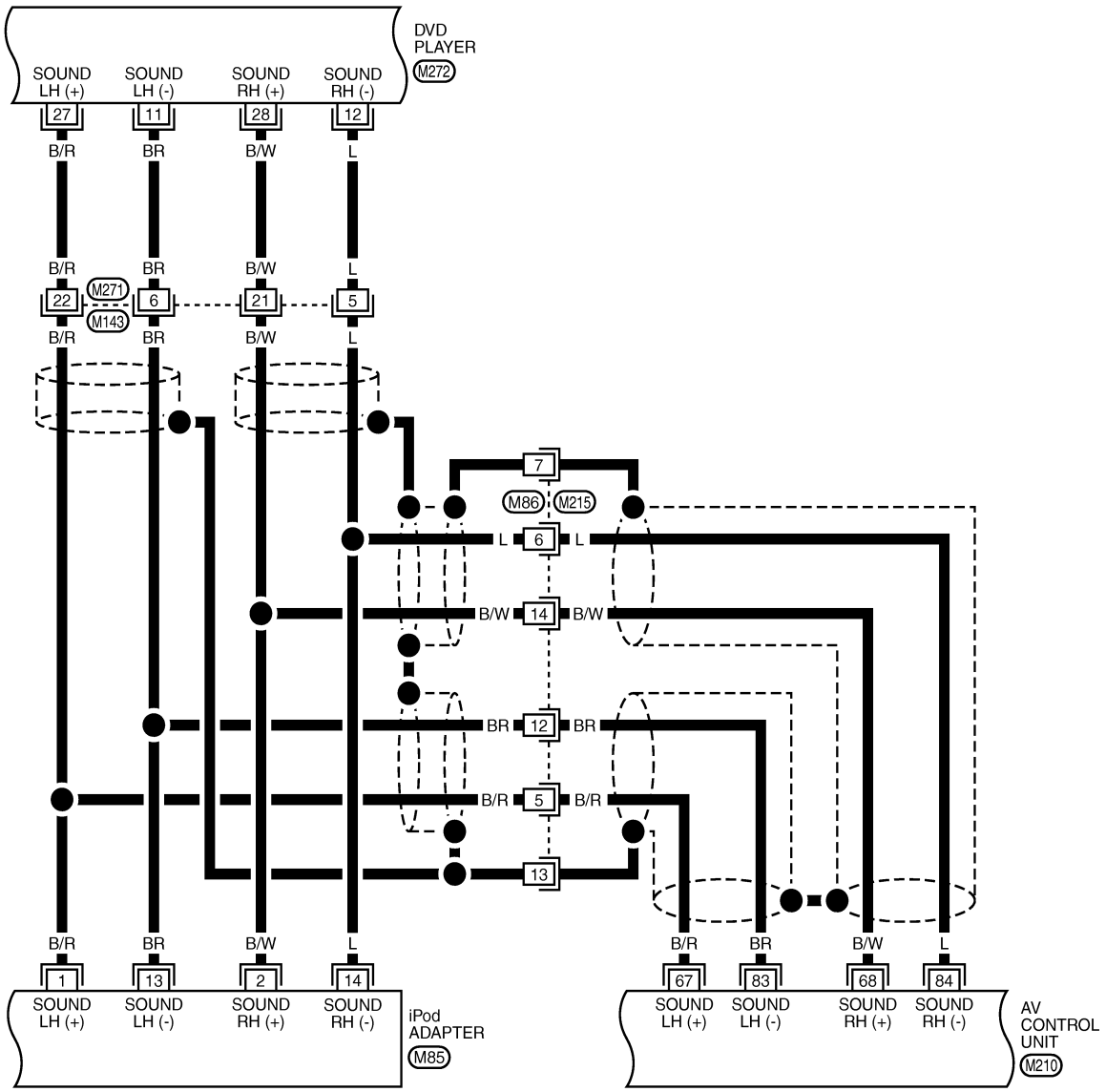

TO AV-AV-47
L
Y
Y
R
TO
AV-AV-62
PRECEDING
PAGE
Q
V
V
BR
BR
S
V
Y
V
5
BAT
3
ACC
iPod
ADAPTER
M85
GND
CHARGE
POWER
ACC
3.3V
ACC
DETECT
ACC
IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND
(-)
SOUND
RH (+)
SOUND
LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod
SIDE
M156

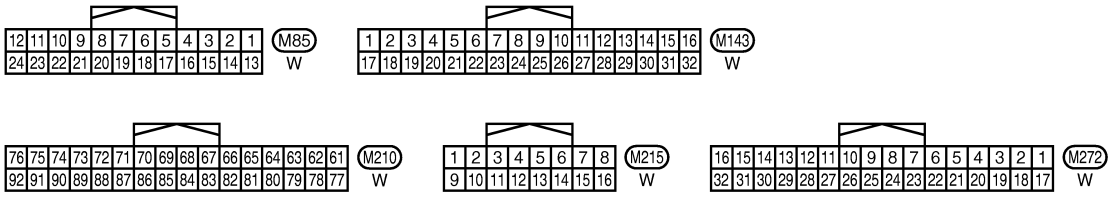

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6737E

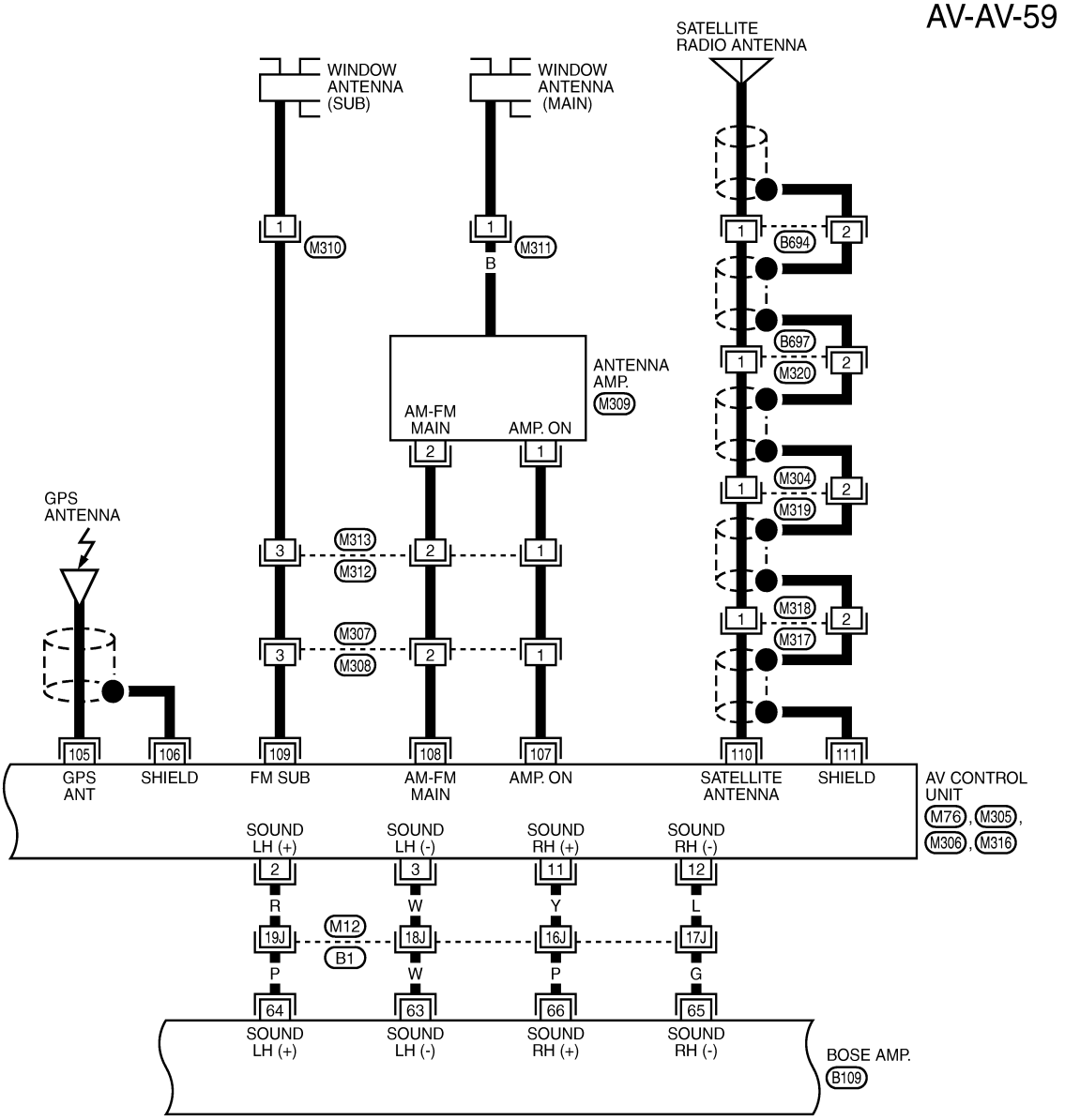
AV-AV-58

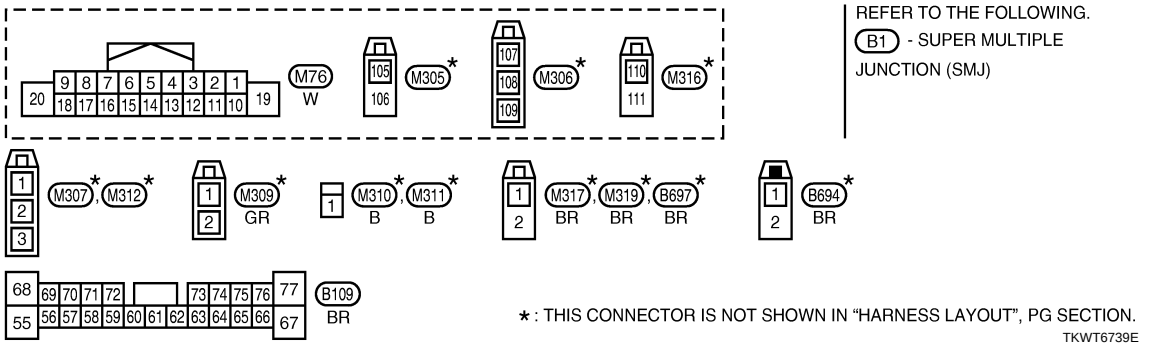




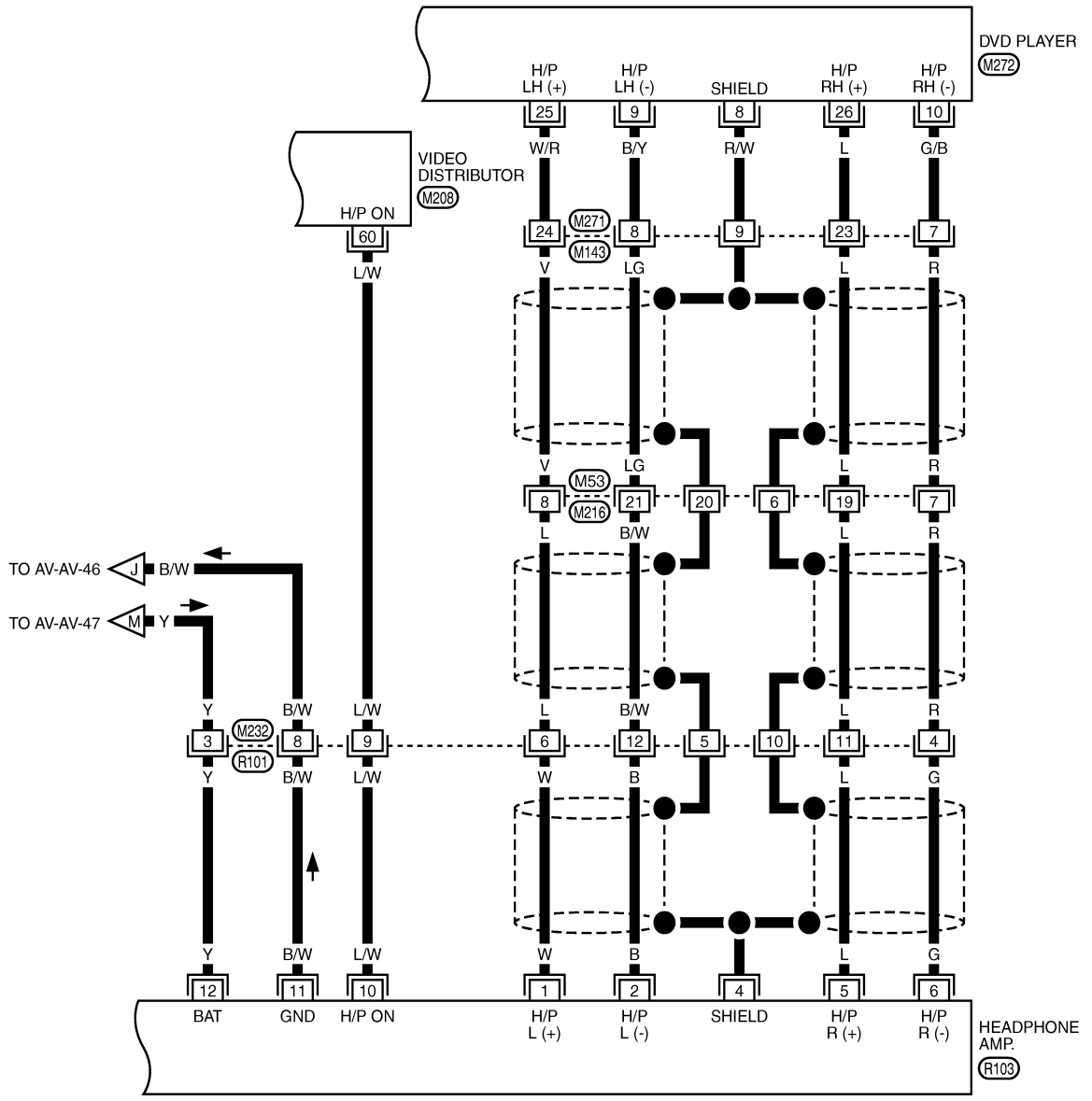
TKWT6738E

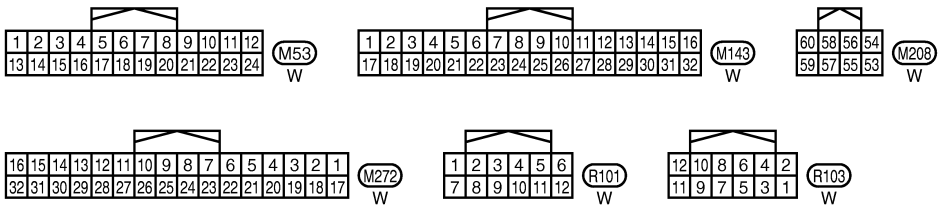
AV-AV-59


SATELLITE RADIO ANTENNA
WINDOW ANTENNA (SUB)
WINDOW ANTENNA (MAIN)
M310
M311
B694
B697
M320
M304
M319
M318
M317
ANTENNA AMP.
M309
AM-FM MAIN
AMP. ON
GPS ANTENNA
M313
M312
M307
M308
105 GPS ANT
106 SHIELD
109 FM SUB
108 AM-FM MAIN
107 AMP. ON
110 SATELLITE ANTENNA
111 SHIELD
AV CONTROL UNIT
M76, M305, M306, M316
SOUND LH (+)
SOUND LH (-)
SOUND RH (+)
SOUND RH (-)
R
W
Y
L
M12
B1
P
W
P
G
64 SOUND LH (+)
63 SOUND LH (-)
66 SOUND RH (+)
65 SOUND RH (-)
BOSE AMP.
B109


M76 W
M305*
M306*
M316*
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)
M307*, M312*
M309* GR
M310*, M311* B B
M317*, M319*, B697* BR BR BR
B694* BR
B109 BR
* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.
TKWT6739E

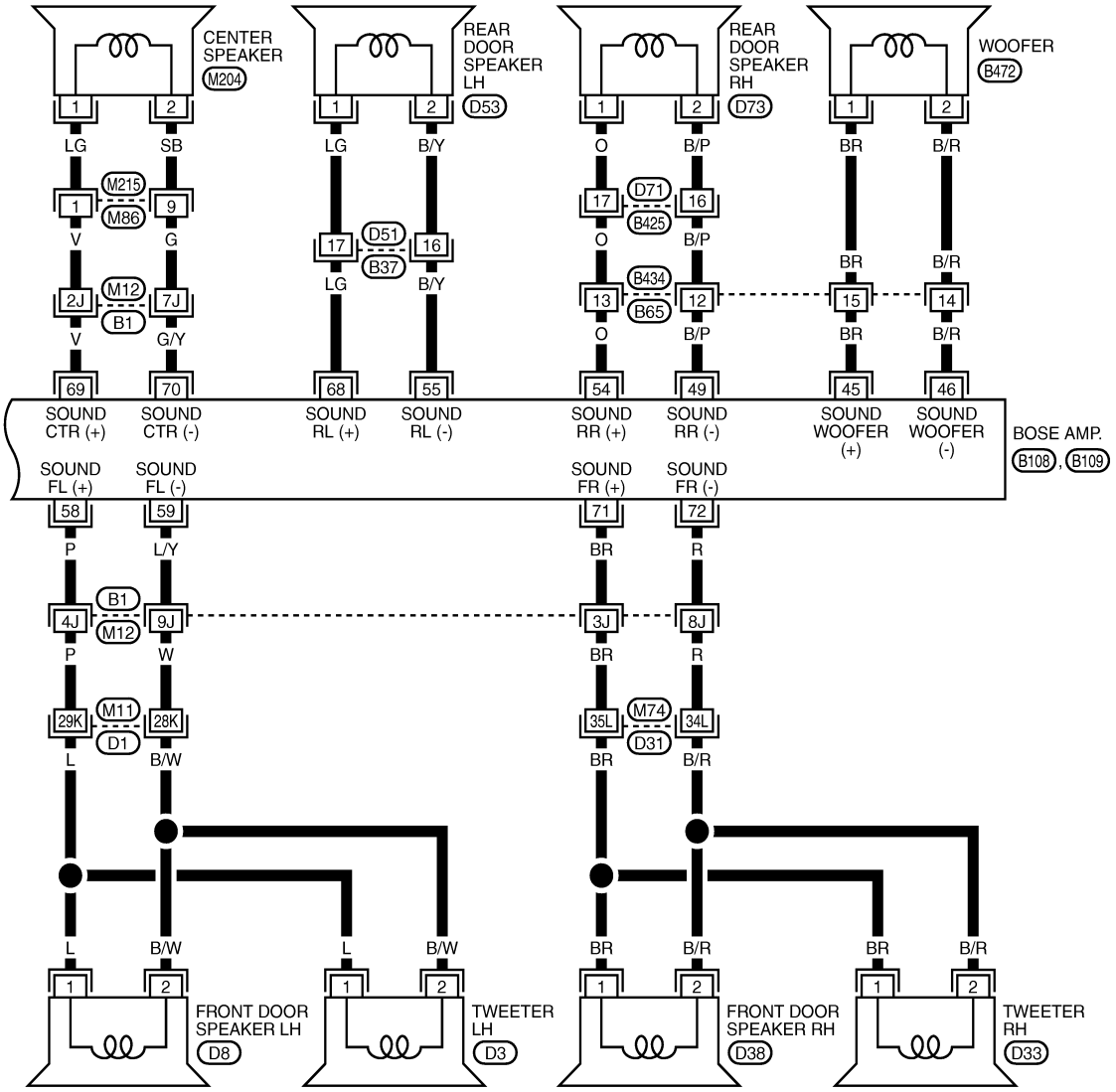
AV-AV-60



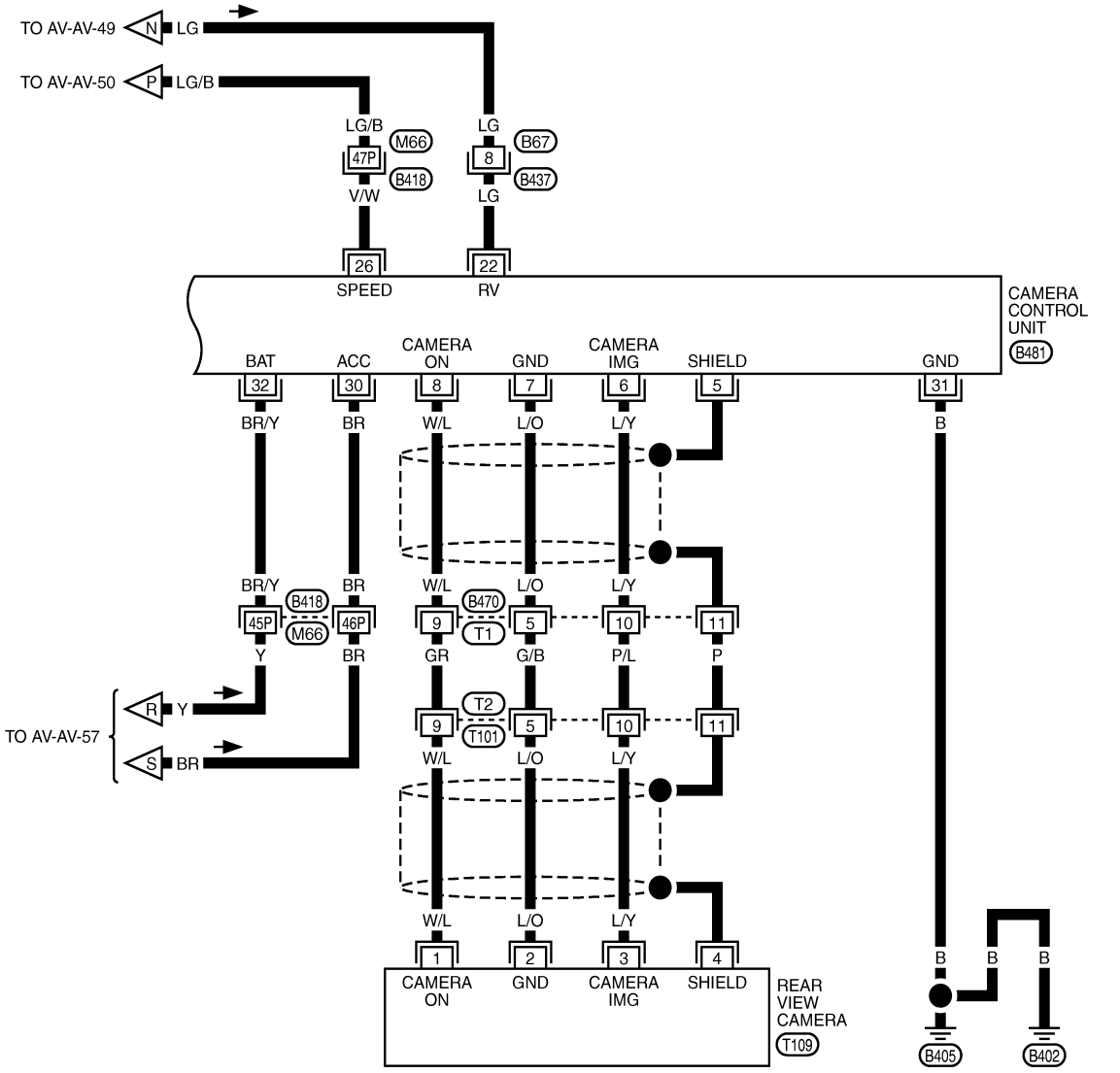


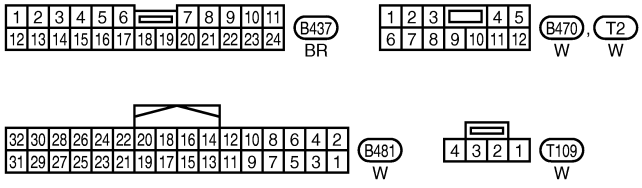
TKWT6740E

AV-AV-61


CENTER SPEAKER M204
REAR DOOR SPEAKER LH D53
REAR DOOR SPEAKER RH D73
WOOFER B472
LG SB LG B/Y O B/P BR B/R
M215 M86 D51 B37 D71 B425 B434 B65 M12 B1
V G LG B/Y O B/P BR B/R
V G/Y O B/P BR B/R
69 70 68 55 54 49 45 46
SOUND CTR (+) SOUND CTR (-) SOUND RL (+) SOUND RL (-) SOUND RR (+) SOUND RR (-) SOUND WOOFER (+) SOUND WOOFER (-)
BOSE AMP. B108, B109
SOUND FL (+) SOUND FL (-) SOUND FR (+) SOUND FR (-)
58 59 71 72
P L/Y BR R
B1 M12 4J 9J 3J 8J
P W BR R
M11 D1 29K 28K M74 D31 35L 34L
L B/W BR B/R
L B/W L B/W BR B/R BR B/R
FRONT DOOR SPEAKER LH D8
TWEETER LH D3
FRONT DOOR SPEAKER RH D38
TWEETER RH D33
M204, D3, D33 BR BR BR
M215 W
REFER TO THE FOLLOWING.
B1, D1, D31 - SUPER MULTIPLE JUNCTION (SMJ)
B37, B425 W W
B108 BR
B109 BR
B434 W
B472 W
D8, D38, D53, D73 BR BR BR BR
TKWT6741E

AV-AV-62



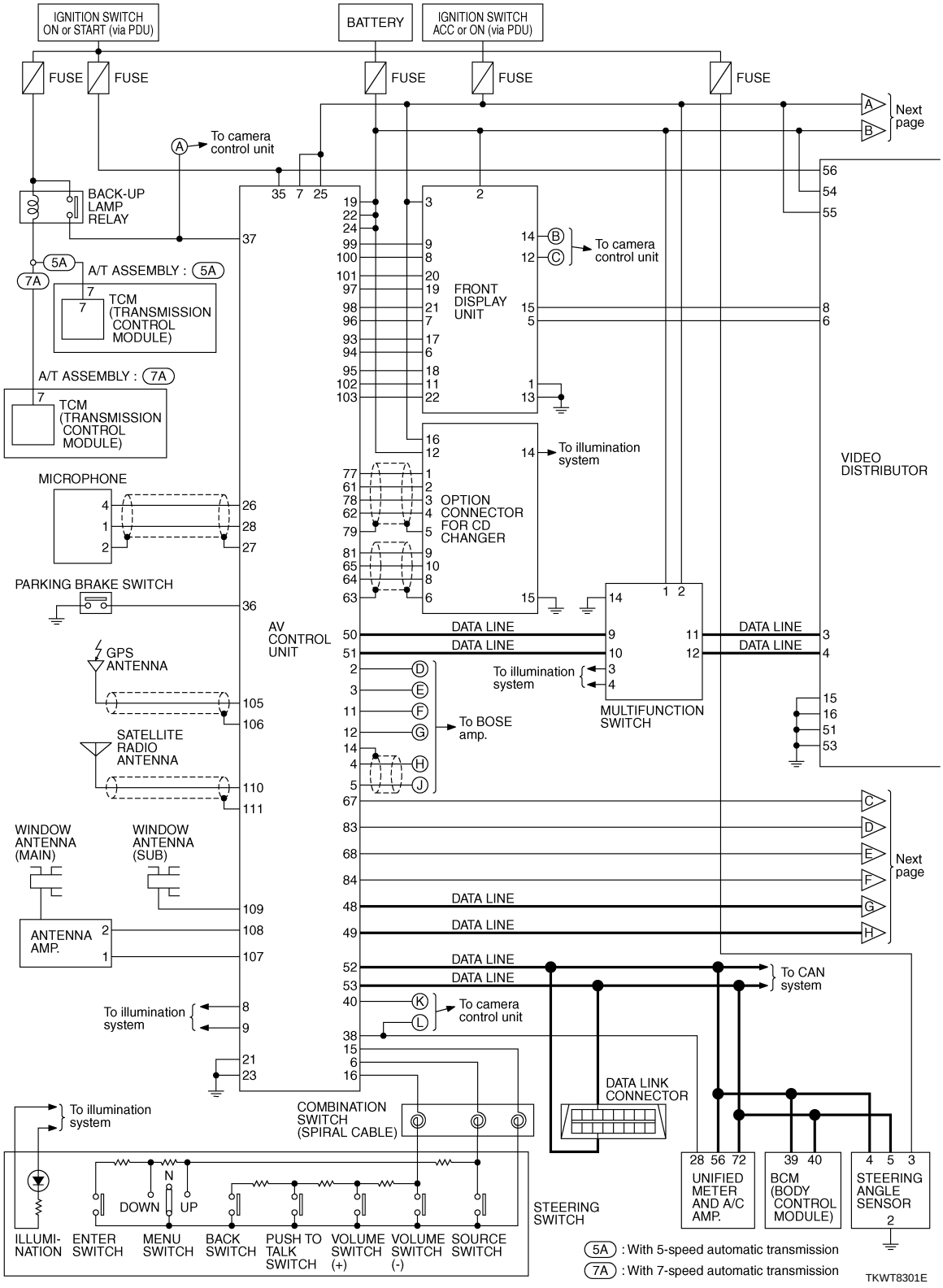


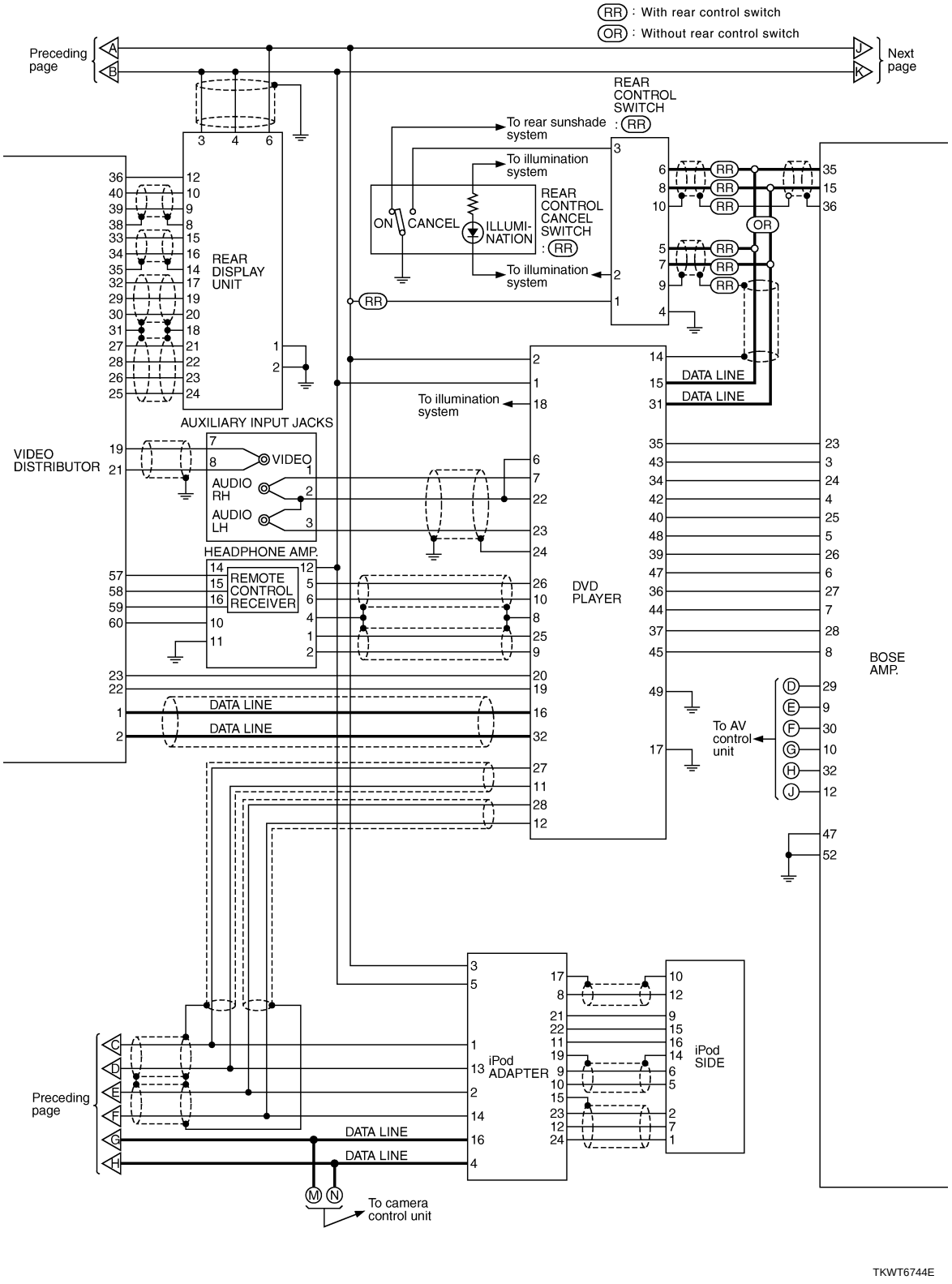
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

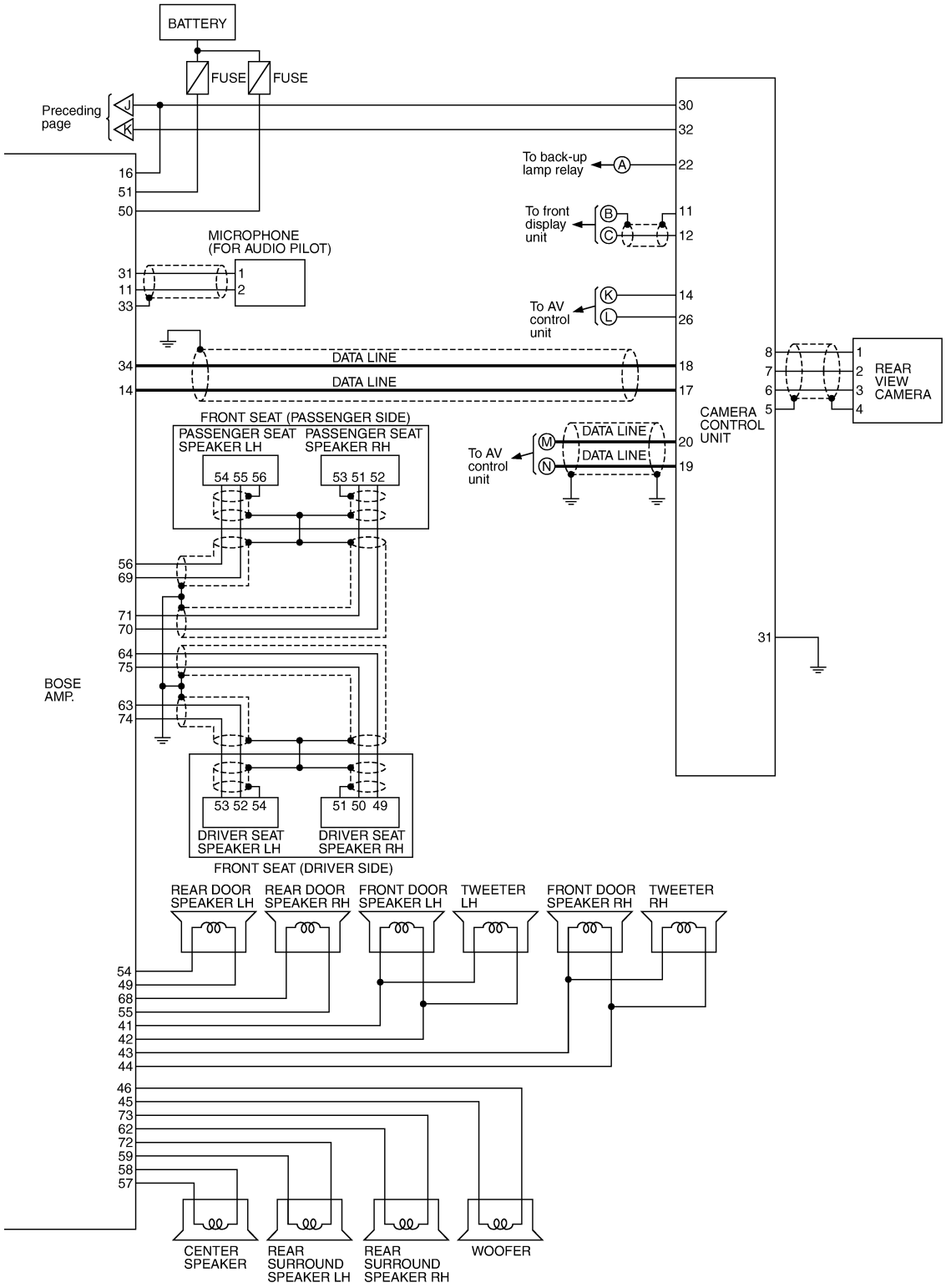
TKWT6742E

Schematic - BOSE 5.1ch Surround Audio System -

INFOID:0000000004391616




RR : With rear control switch
OR : Without rear control switch
Preceding page
Next page
REAR CONTROL SWITCH : RR
To rear sunshade system
To illumination system
REAR CONTROL CANCEL SWITCH : RR
ON
CANCEL
ILLUMI-NATION
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
DVD PLAYER
DATA LINE
BOSE AMP.
To AV control unit
iPod ADAPTER
iPod SIDE
To camera control unit
TKWT6744E



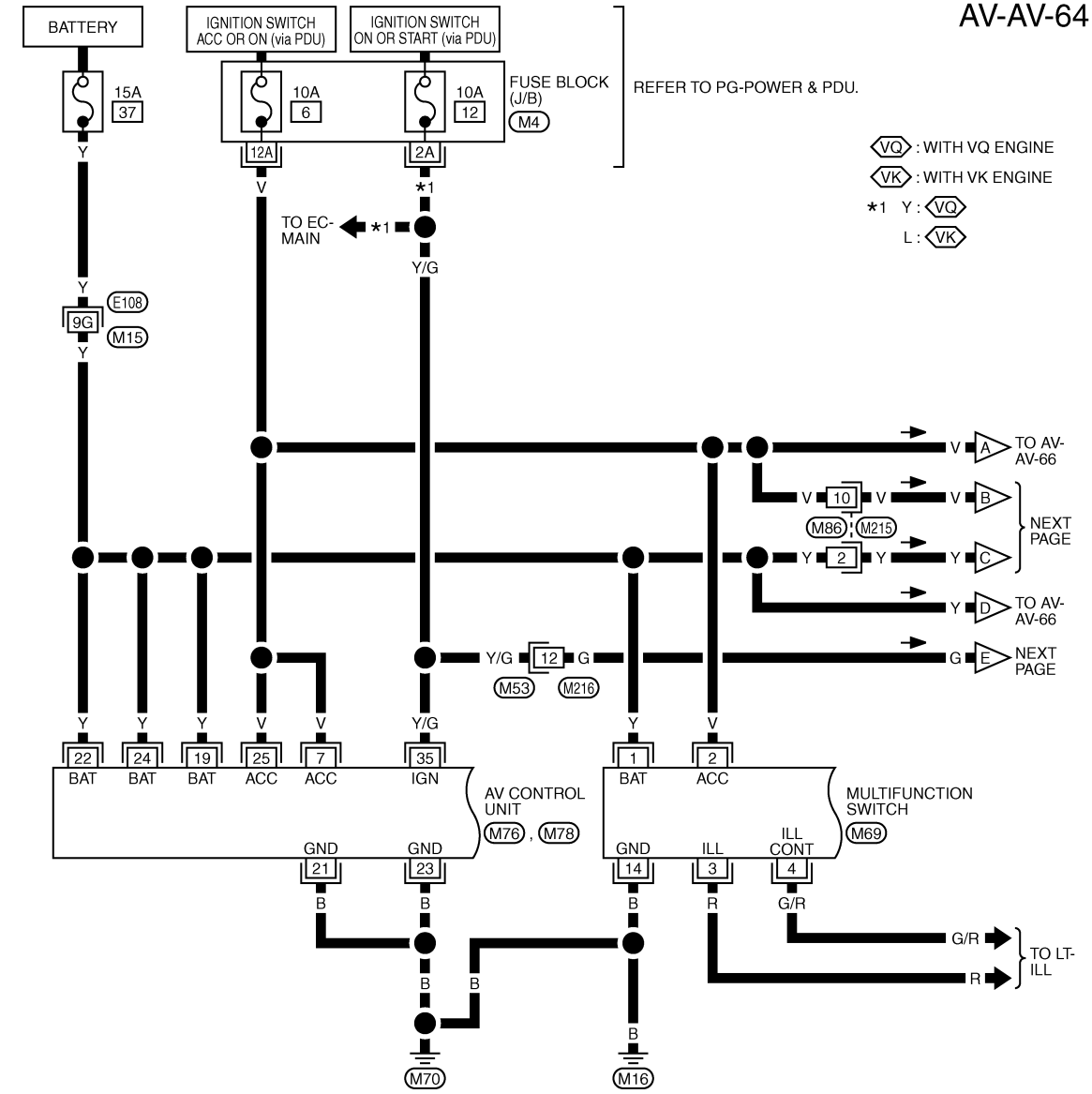
TKWT6745E

Wiring Diagram - AV - / BOSE Surround Audio 5.1ch System

INFOID:0000000004391617

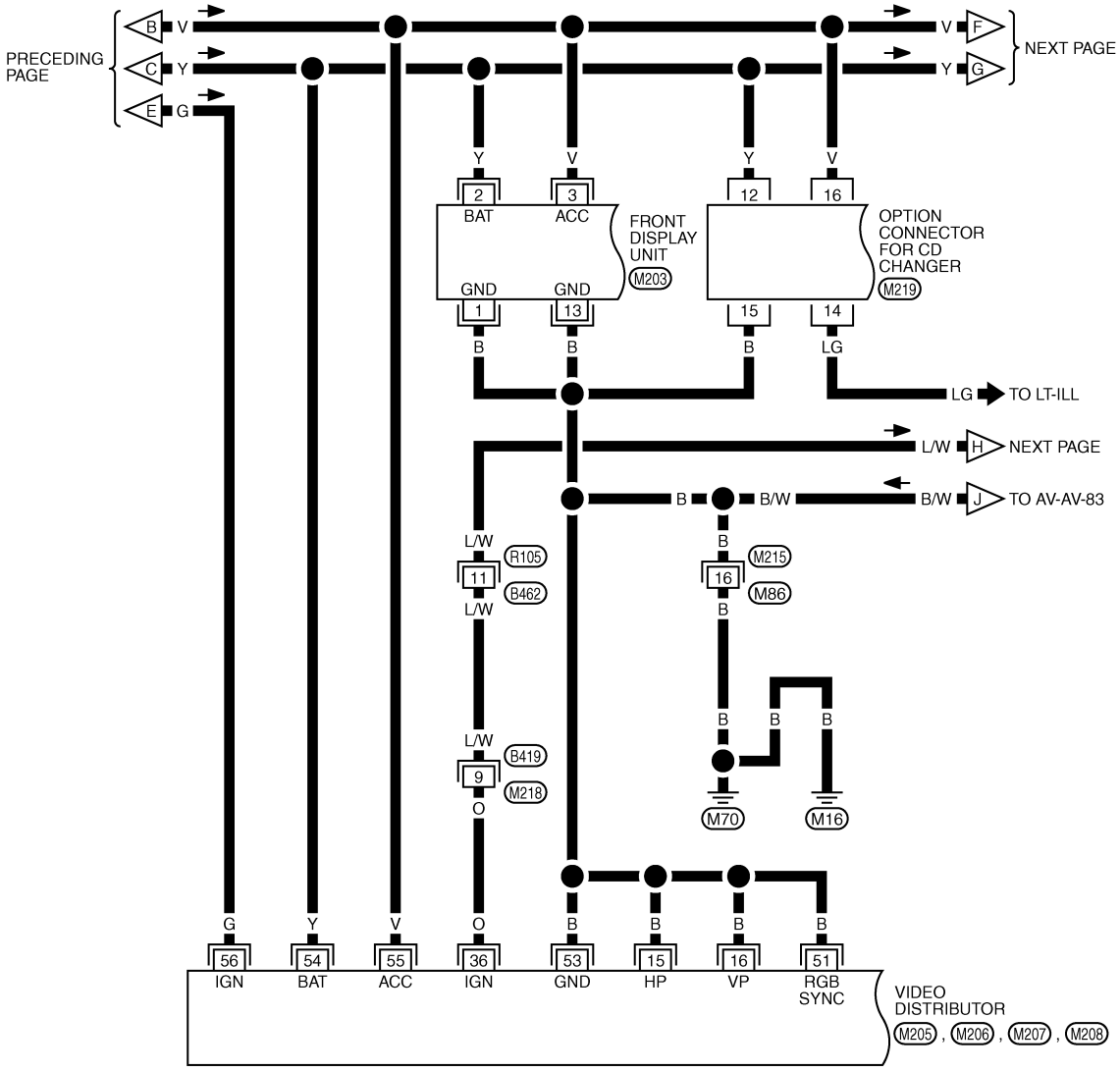
NOTE:

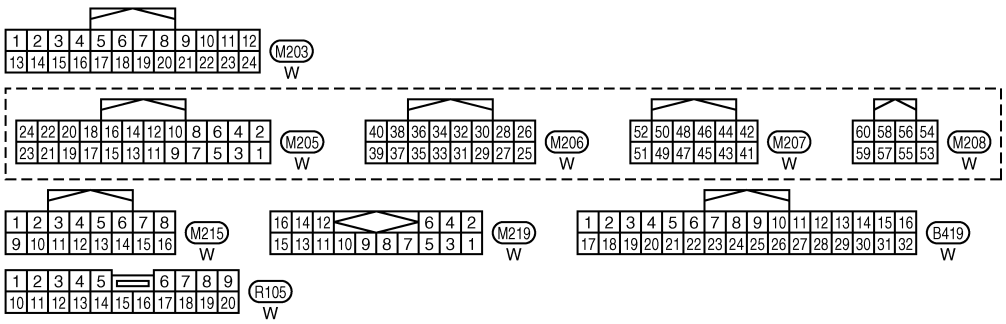
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.



TKWT8302E

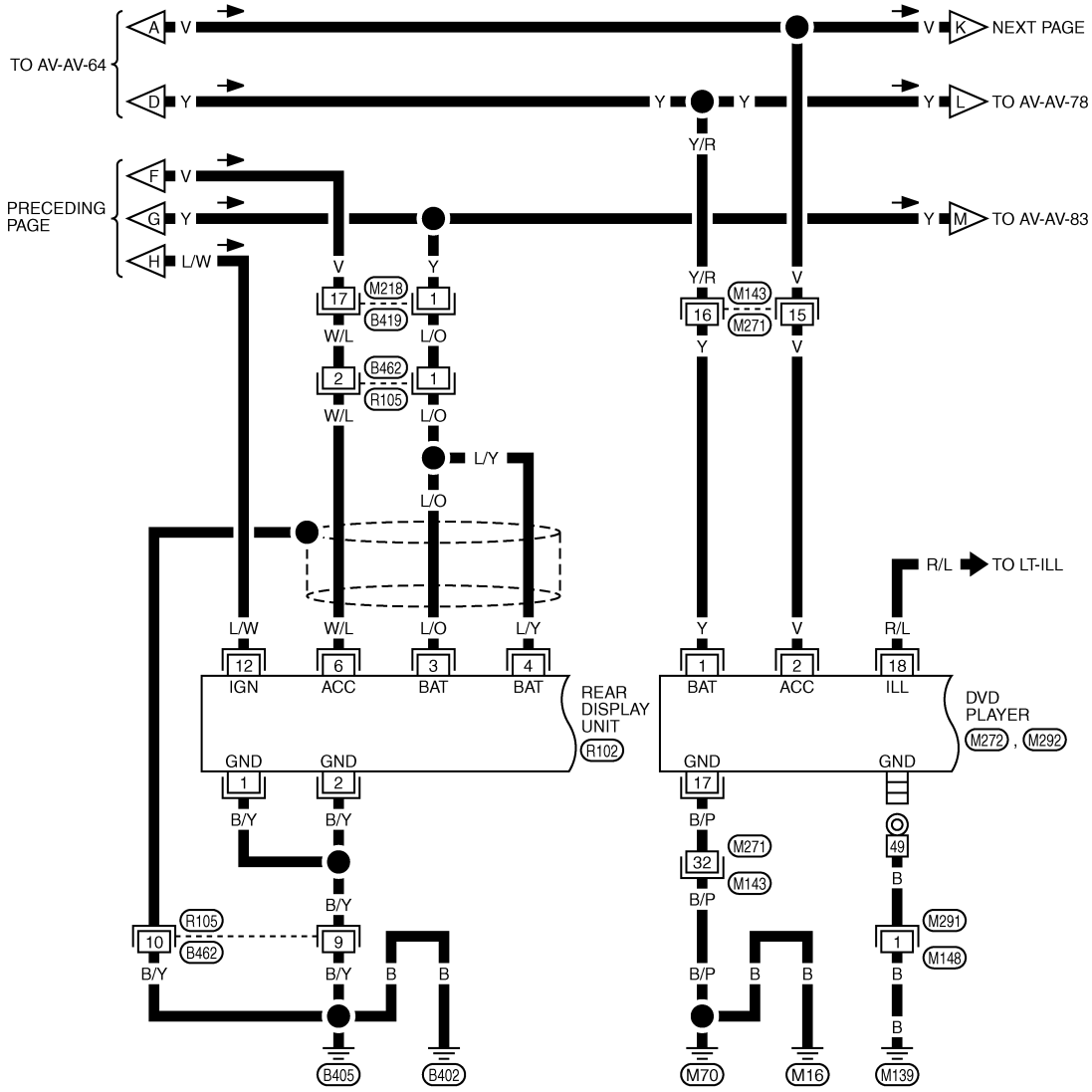
AV-AV-65

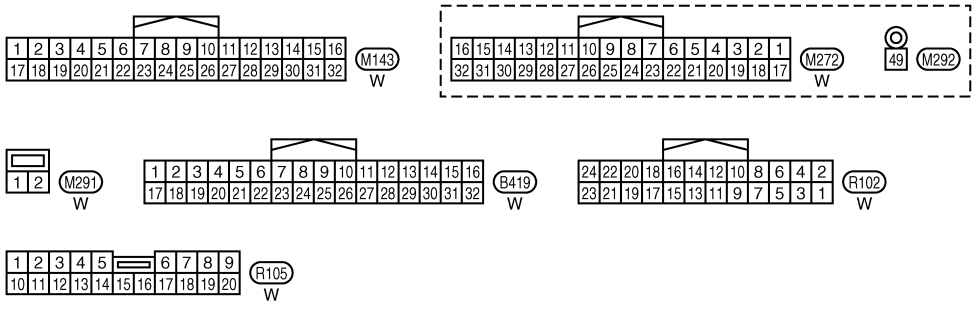




TKWT8303E

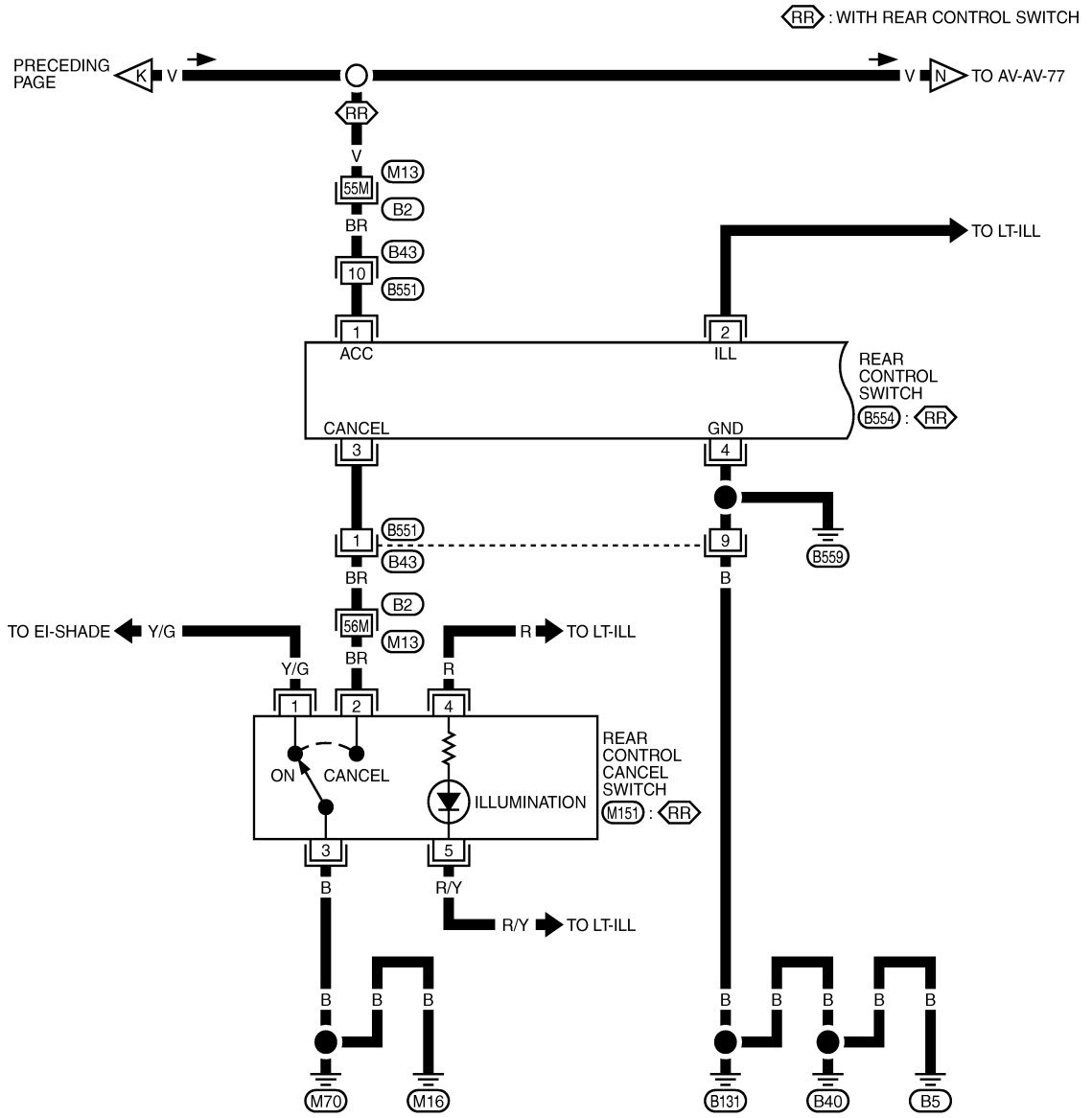
AV-AV-66

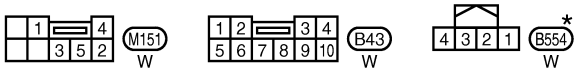




TKWT8304E

AV-AV-67



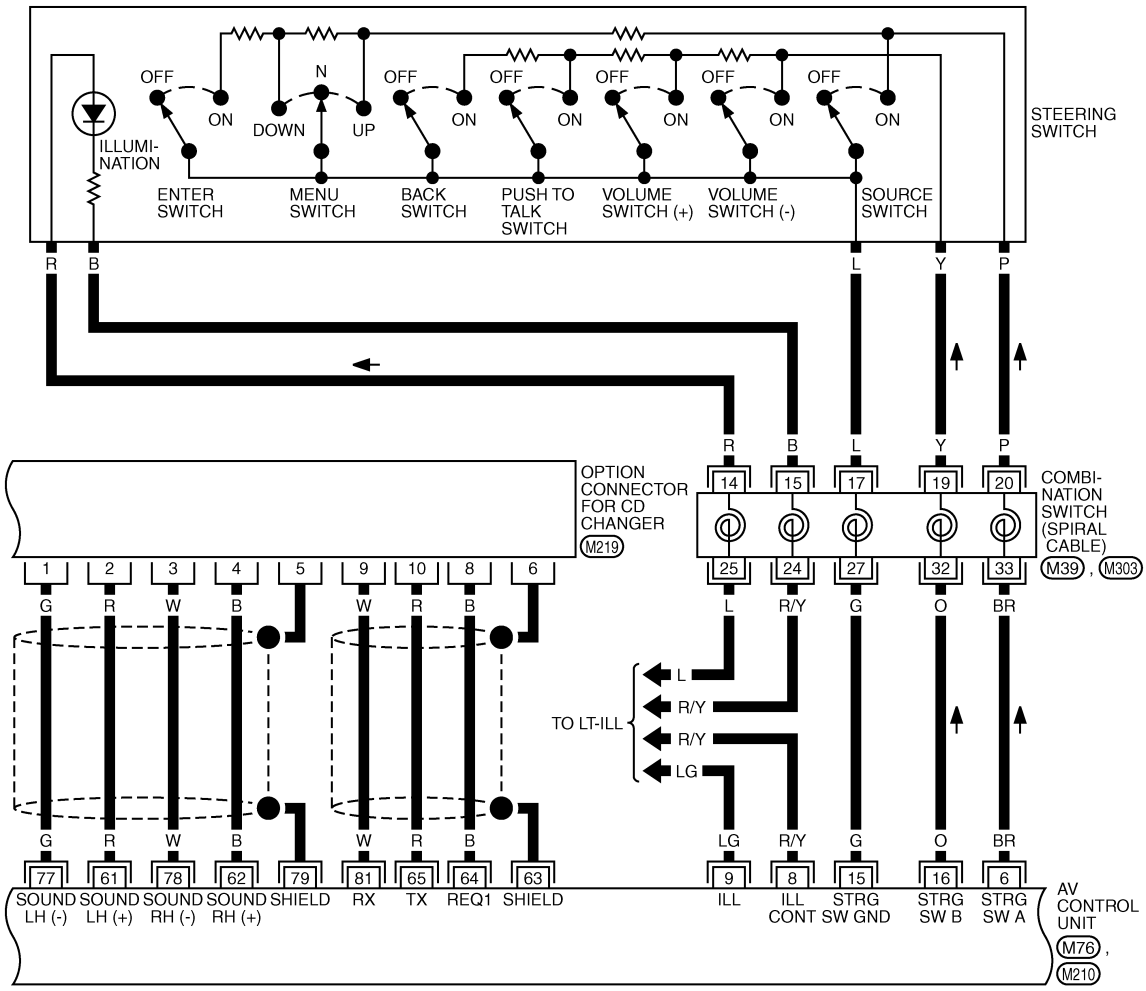


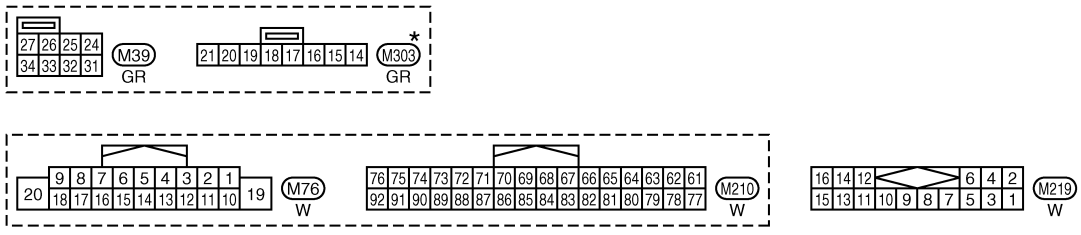
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6749E

AV-AV-68

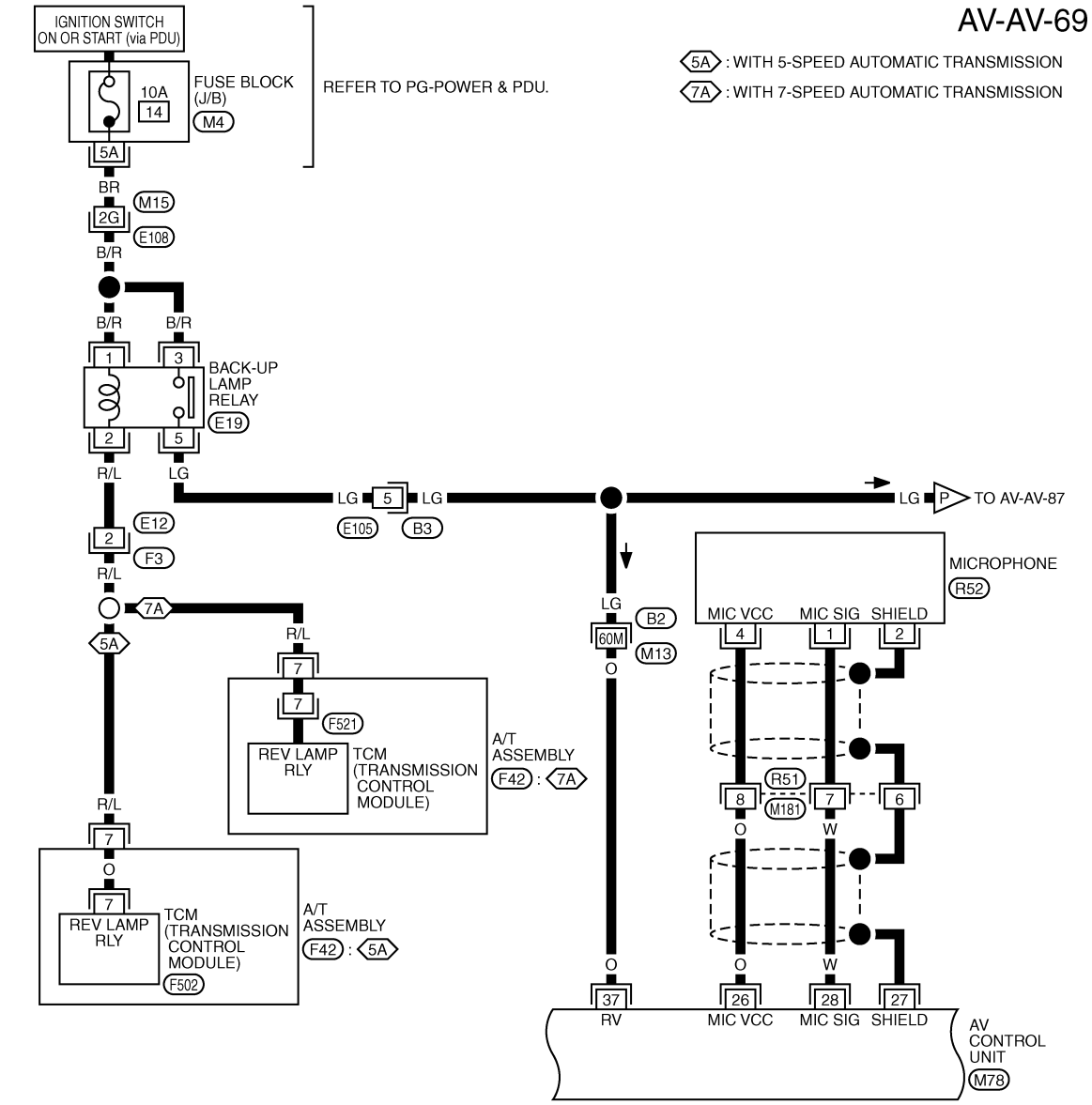


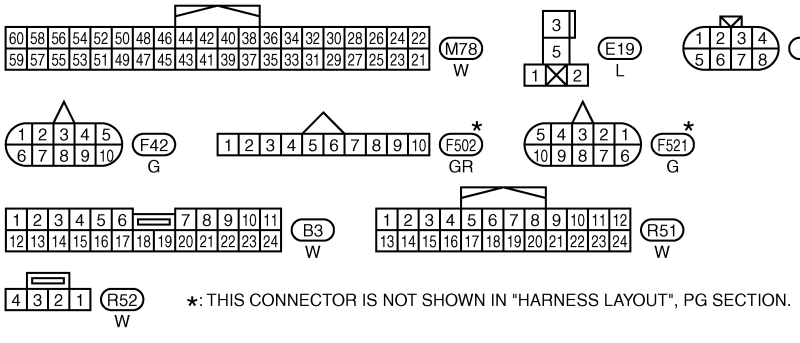


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8305E

AV-AV-69

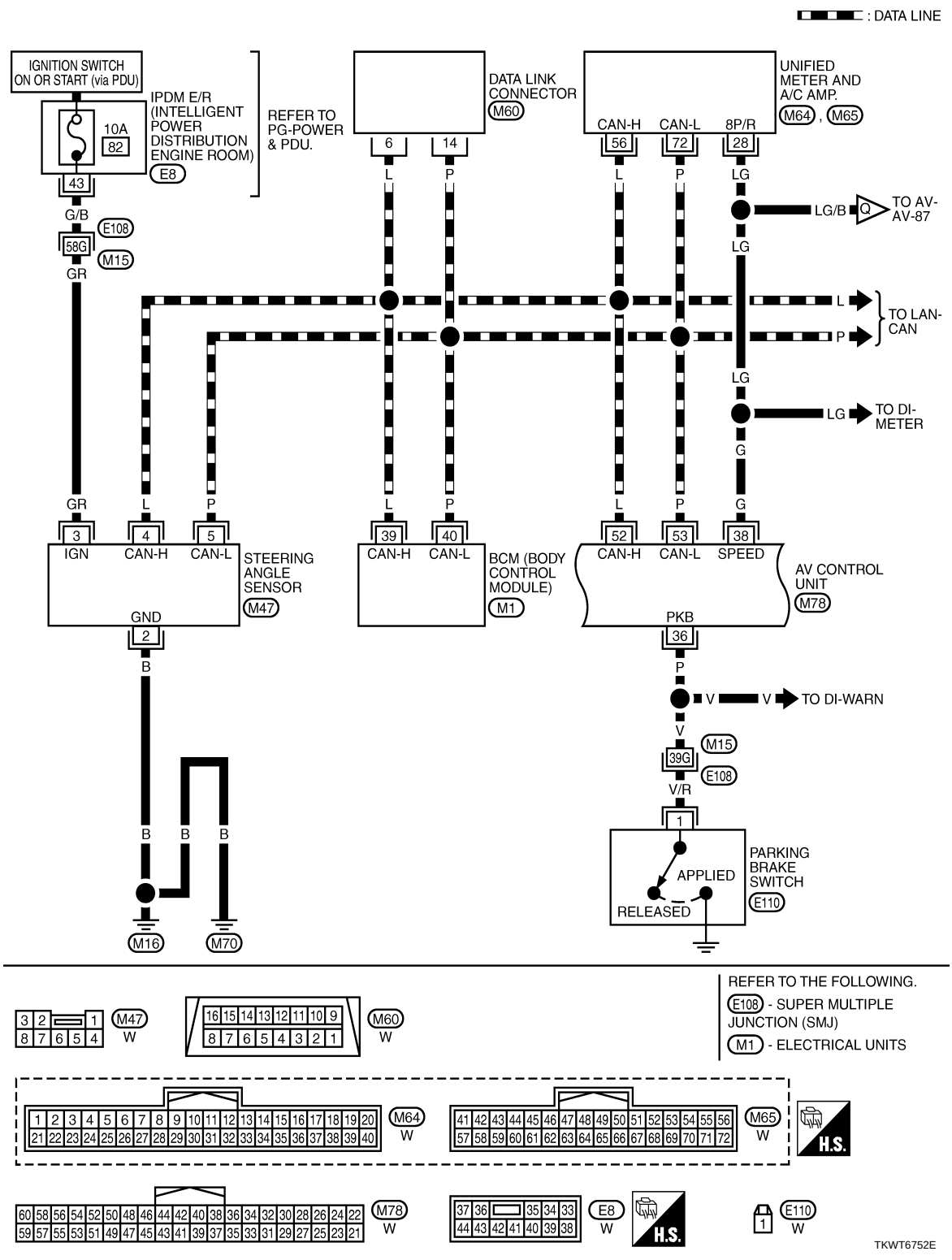




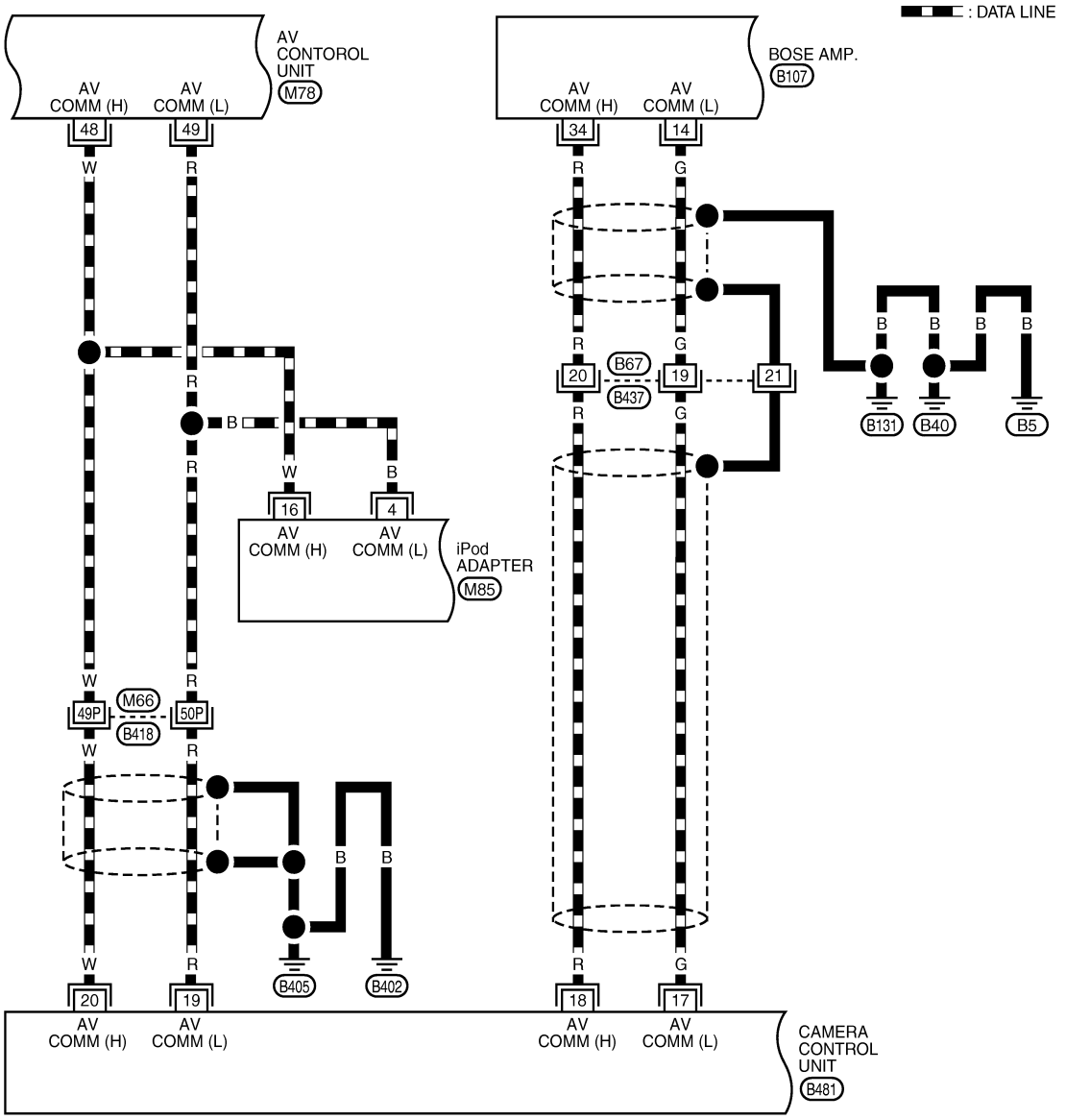
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

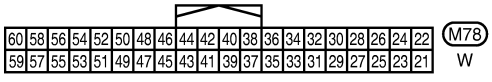
TKWT8306E

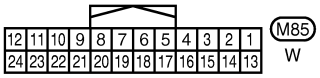
AV-AV-70

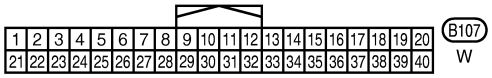

: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
REFER TO PG-POWER & PDU.
DATA LINK CONNECTOR M60
6
14
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56 72 28
G/B
E108
58G
M15
GR
L P L P LG
LG/B Q TO AV-AV-87
LG
L P TO LAN-CAN
LG
LG TO DI-METER
G
GR L P L P L P G
3 4 5 39 40 52 53 38
IGN CAN-H CAN-L
STEERING ANGLE SENSOR M47
CAN-H CAN-L
BCM (BODY CONTROL MODULE) M1
CAN-H CAN-L SPEED
AV CONTROL UNIT M78
GND
2
PKB
36
B
P
V V TO DI-WARN
V
M15
39G
E108
V/R
1
PARKING BRAKE SWITCH E110
APPLIED
RELEASED
B B B
M16 M70
M47 W
M60 W
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M64 W
M65 W
H.S.
M78 W
E8 W
H.S.
E110 W
TKWT6752E

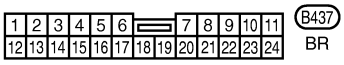
AV-AV-71

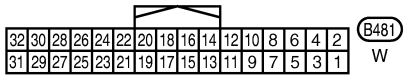








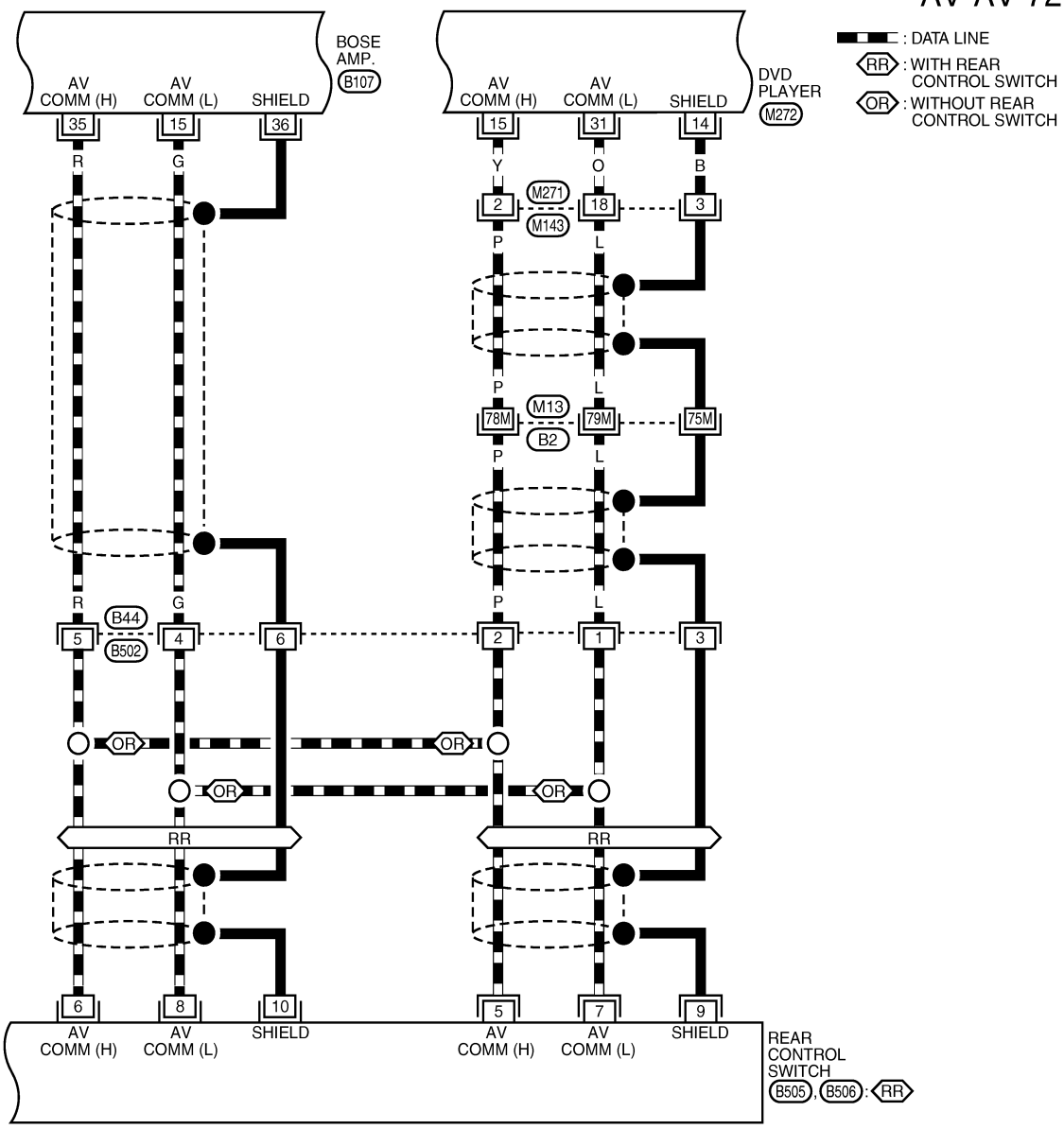


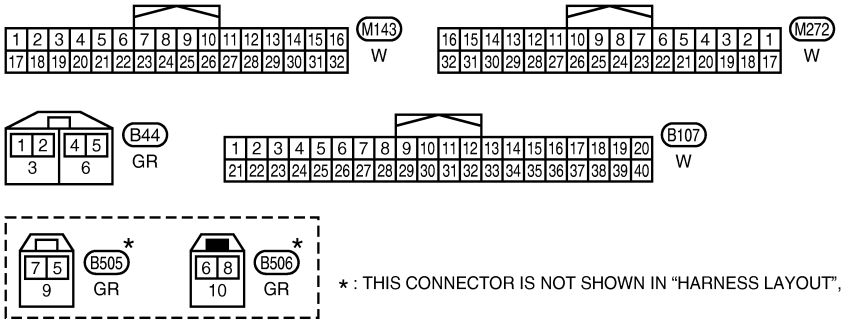


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6753E

AV-AV-72

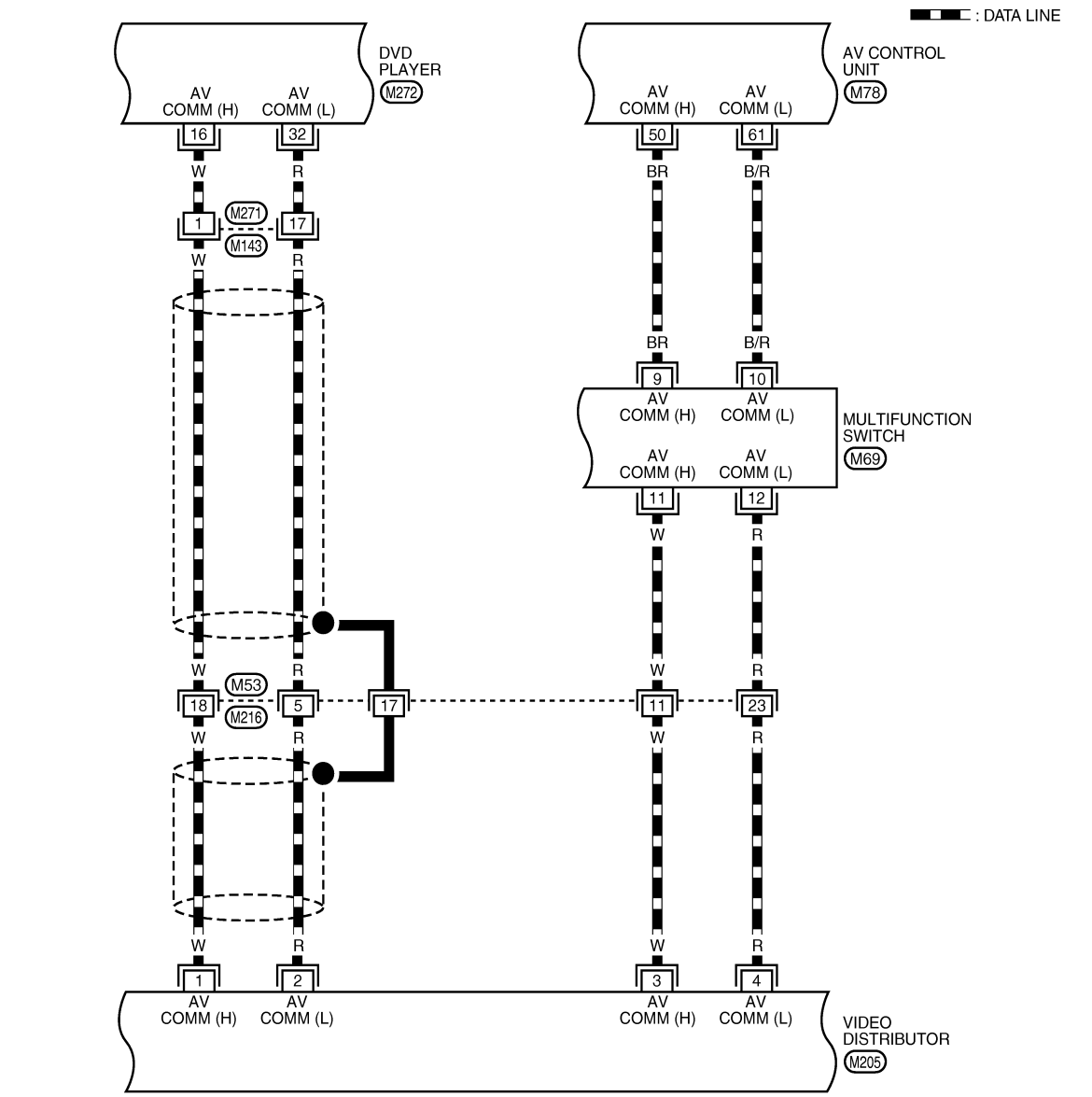


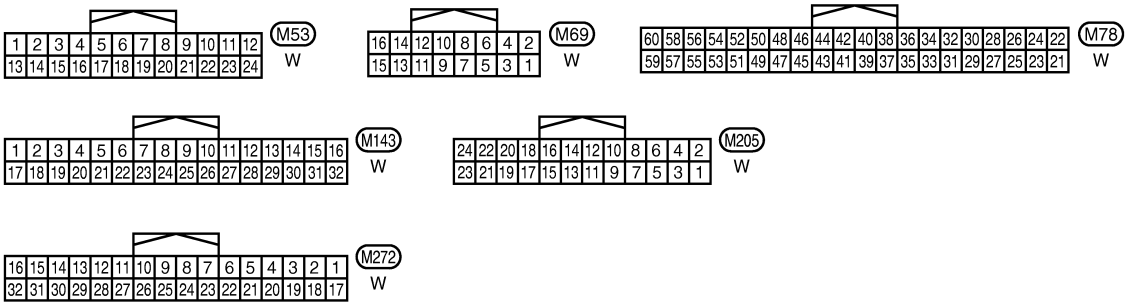


REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6754E

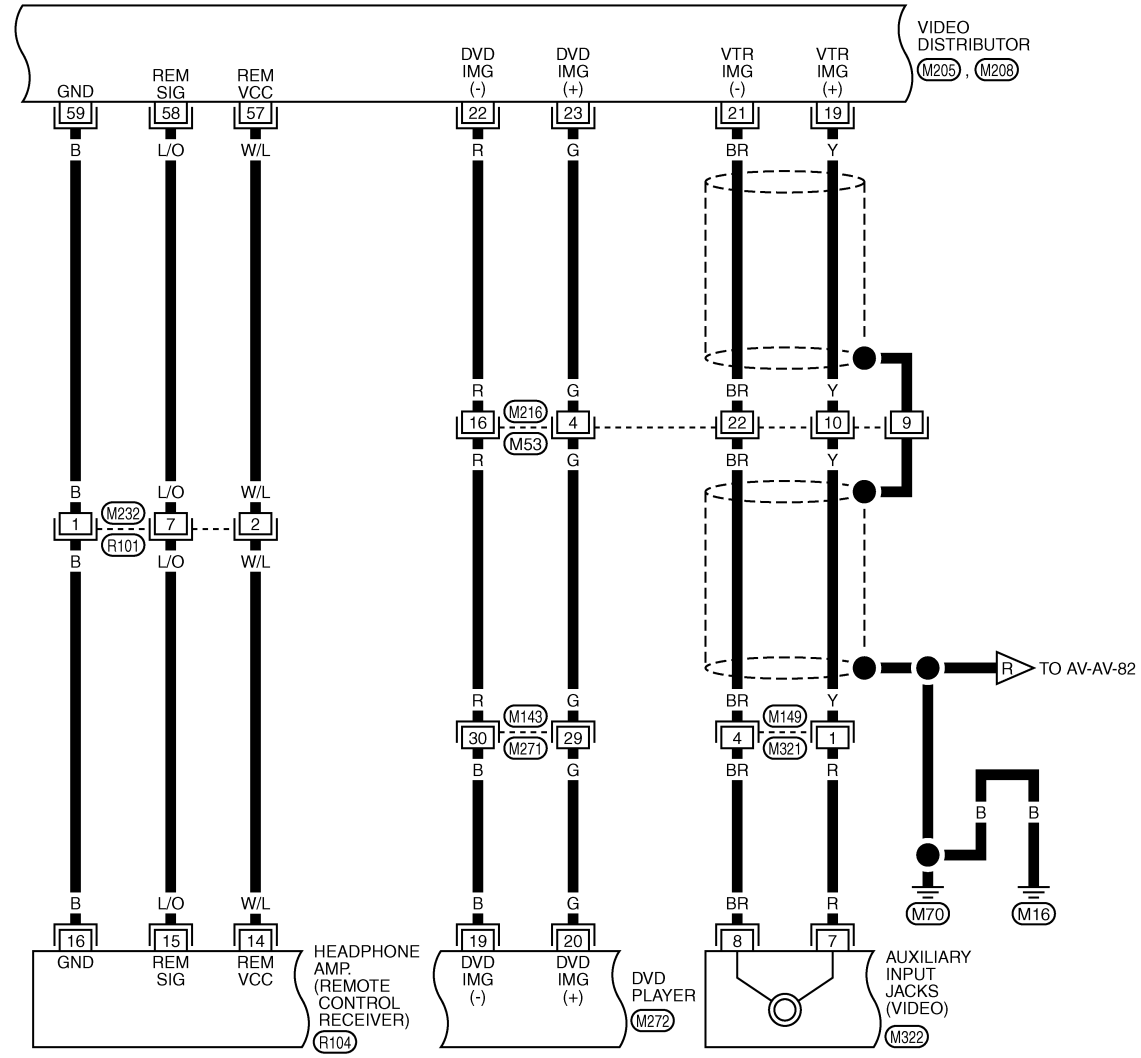
AV-AV-73





TKWT6755E

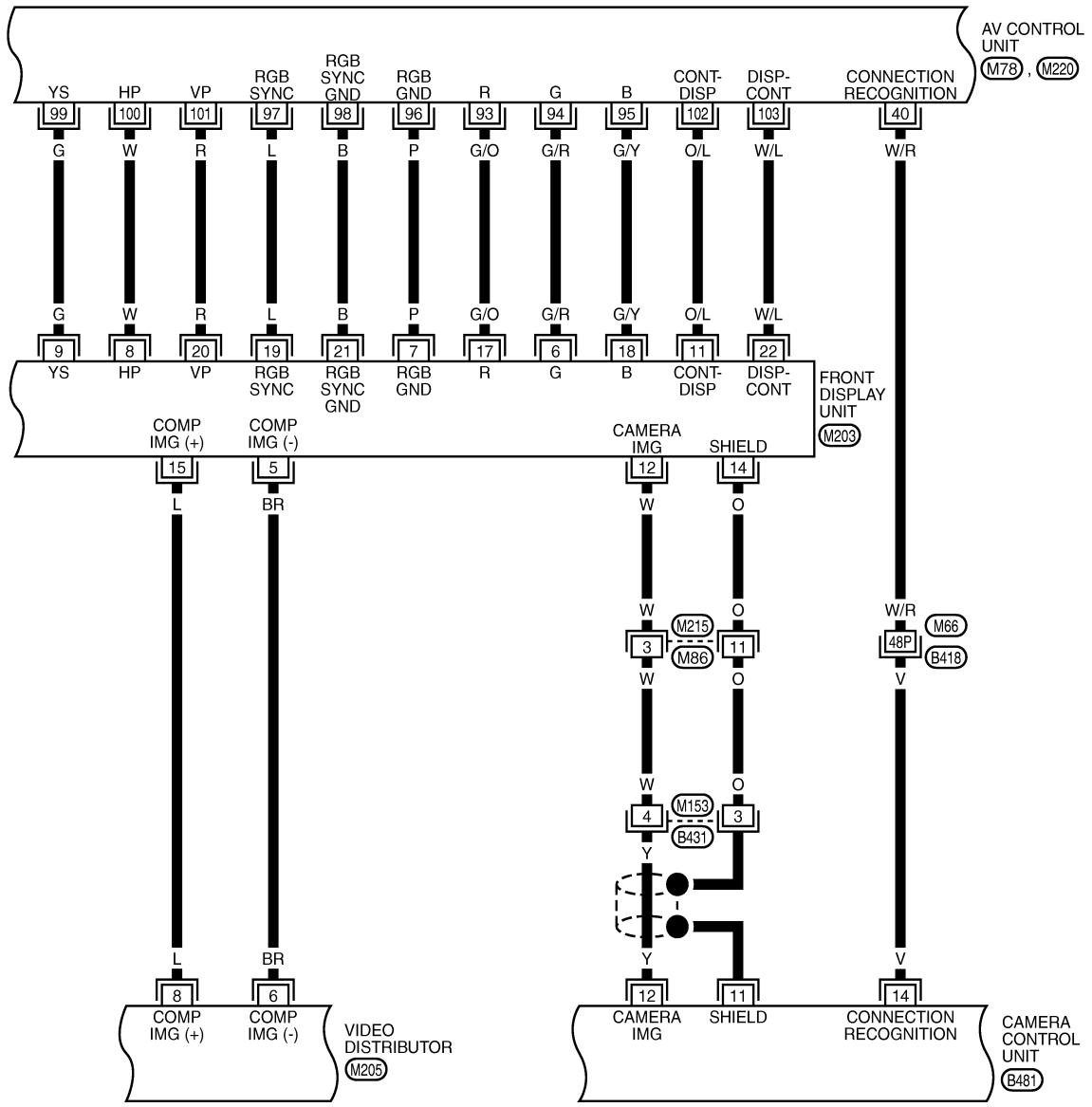
AV-AV-74

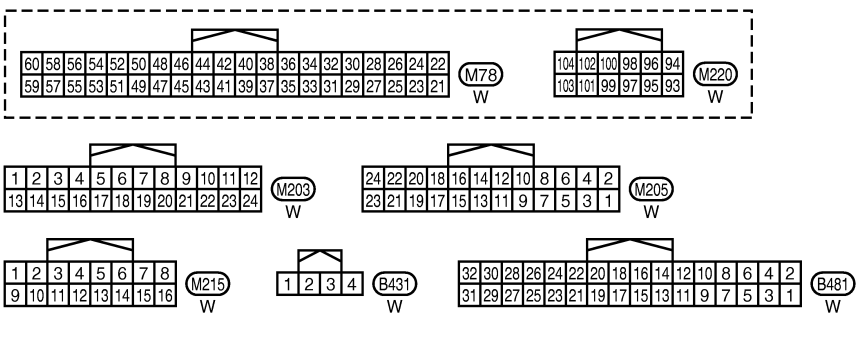


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8307E

AV-AV-75

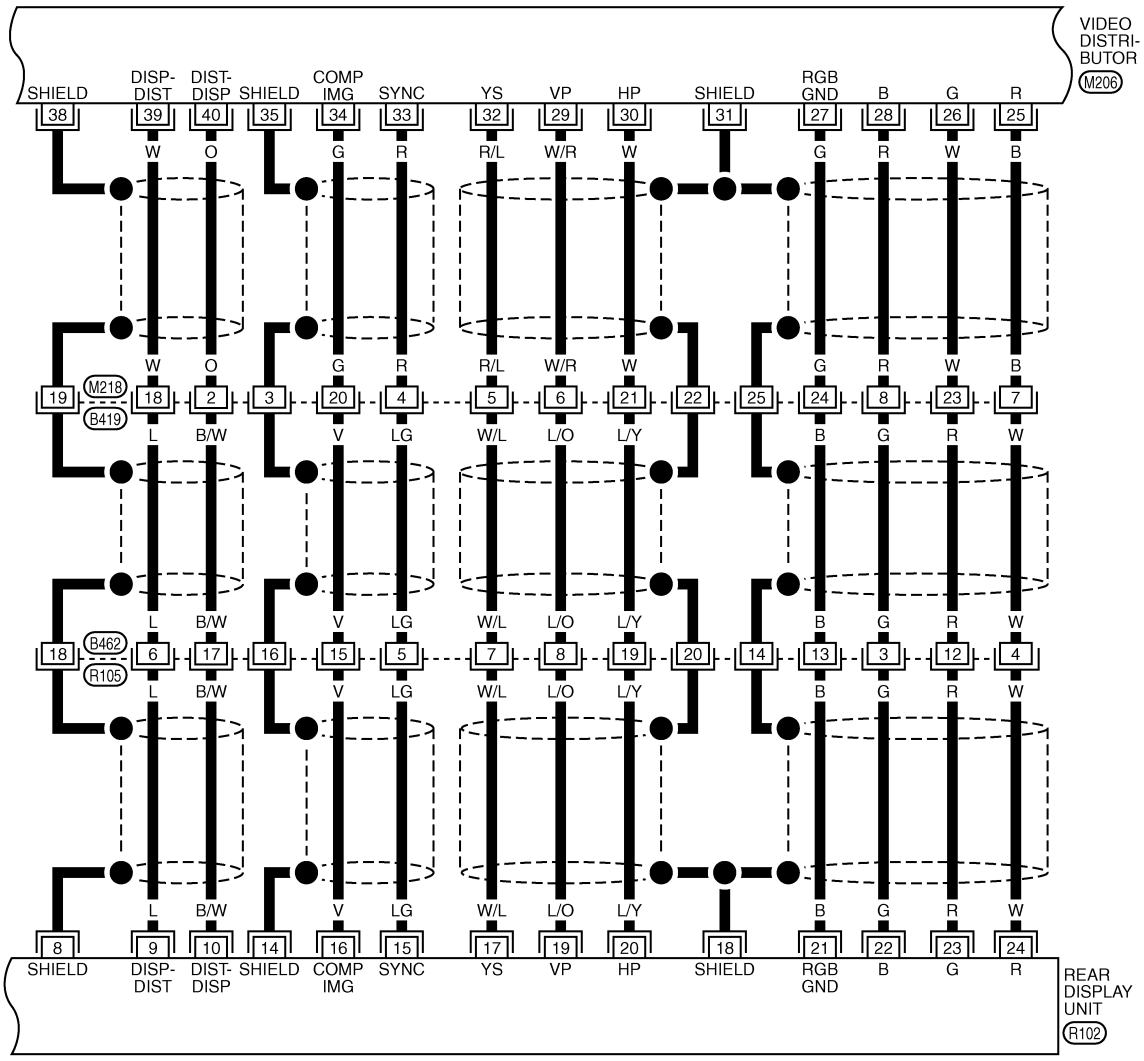


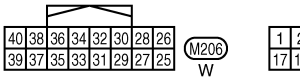


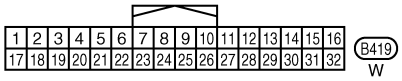
REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

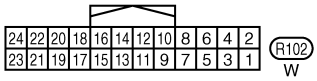
TKWT6757E

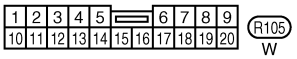
AV-AV-76





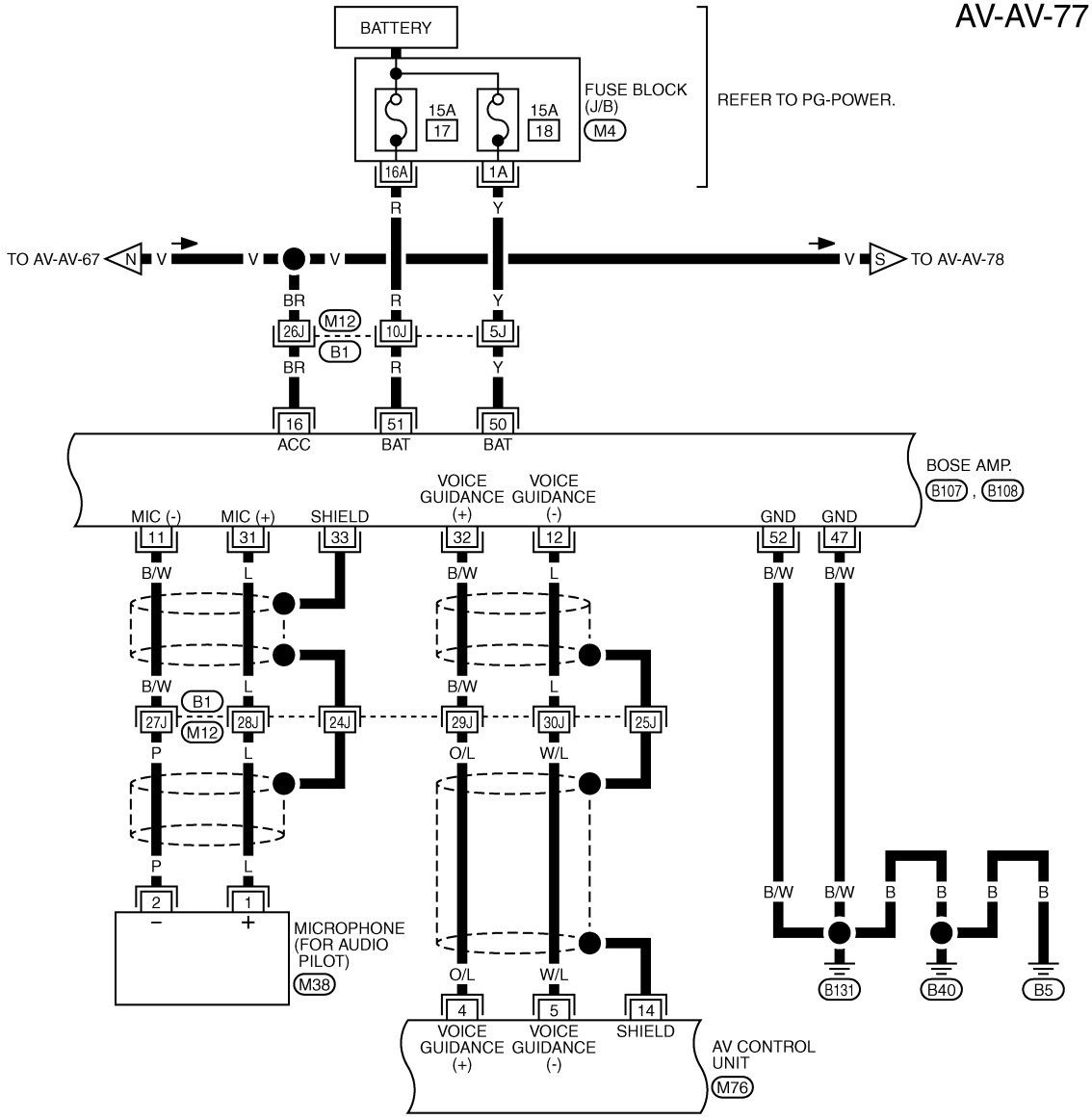


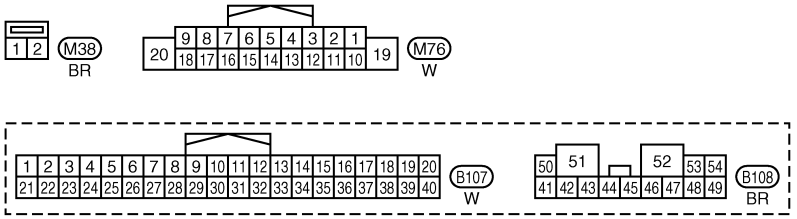




TKWT5152E

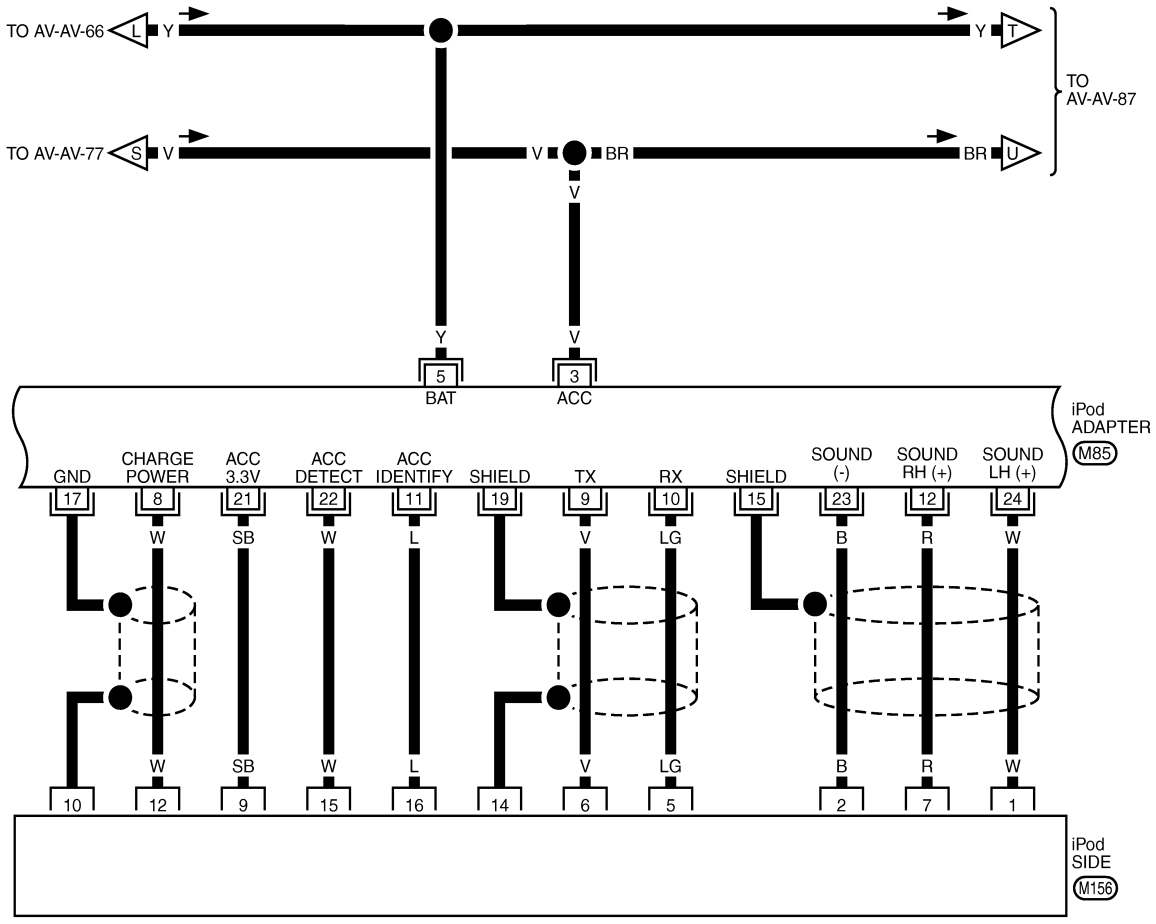
AV-AV-77

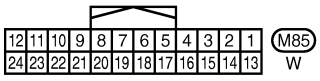


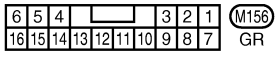


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8308E

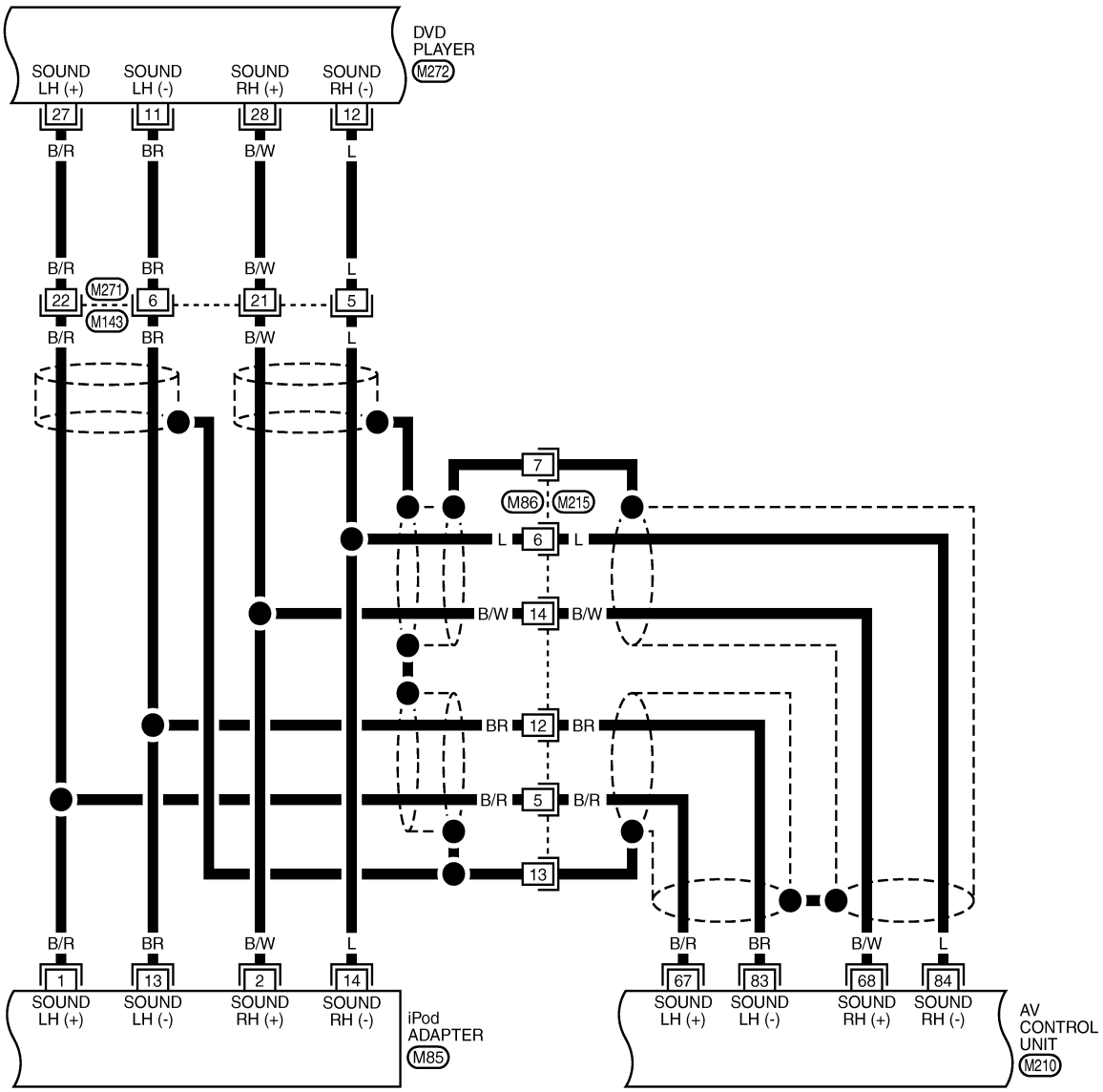

TO AV-AV-66
L
Y
Y
T
TO AV-AV-87
TO AV-AV-77
S
V
V
BR
BR
U
V
Y
V
5
BAT
3
ACC
iPod ADAPTER
M85
GND
CHARGE POWER
ACC 3.3V
ACC DETECT
ACC IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND (-)
SOUND RH (+)
SOUND LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod SIDE
M156

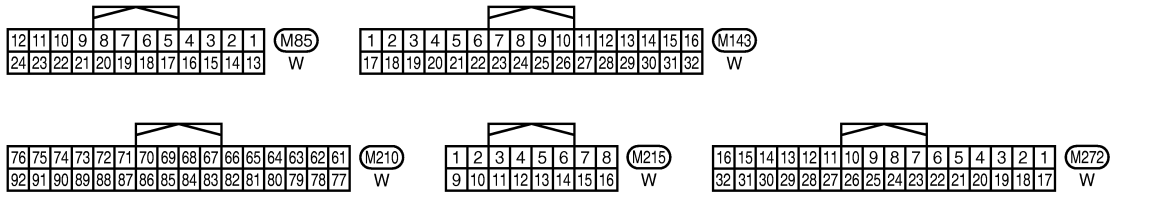

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6761E

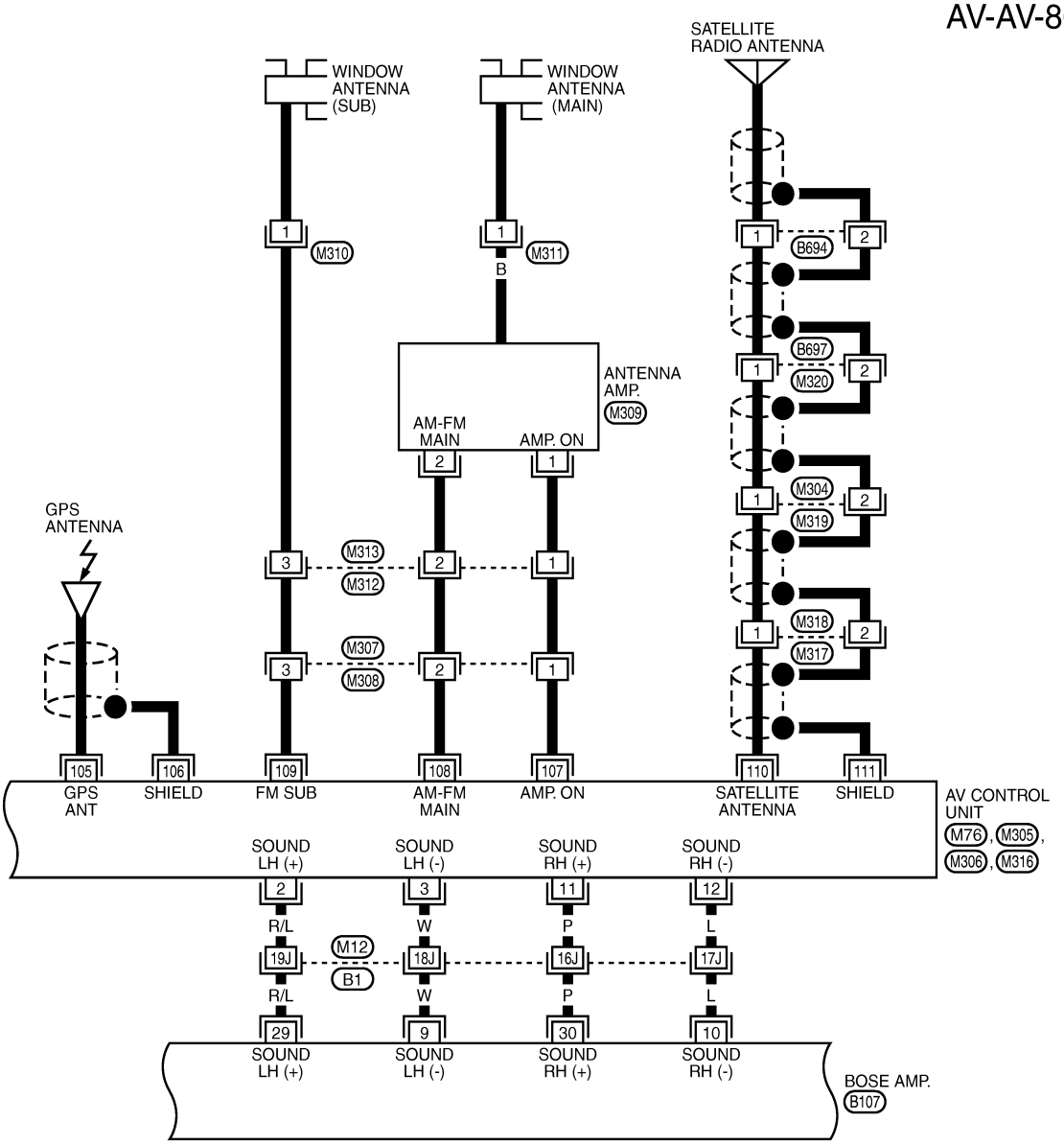
AV-AV-79

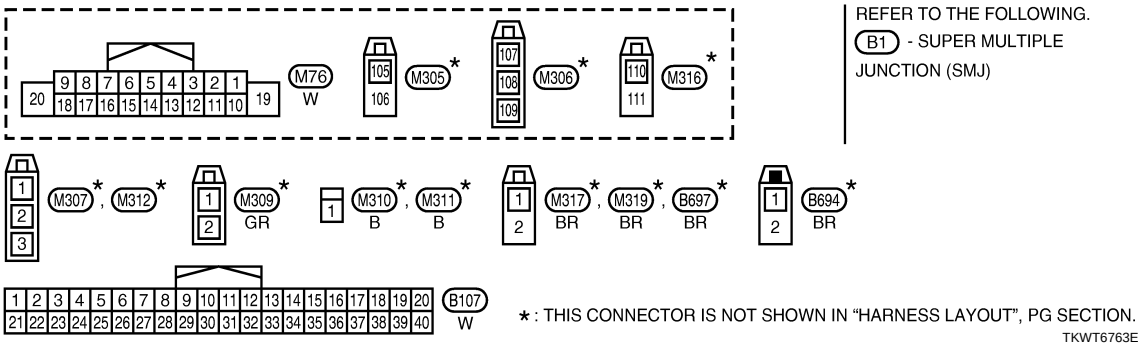




TKWT6762E

AV-AV-80



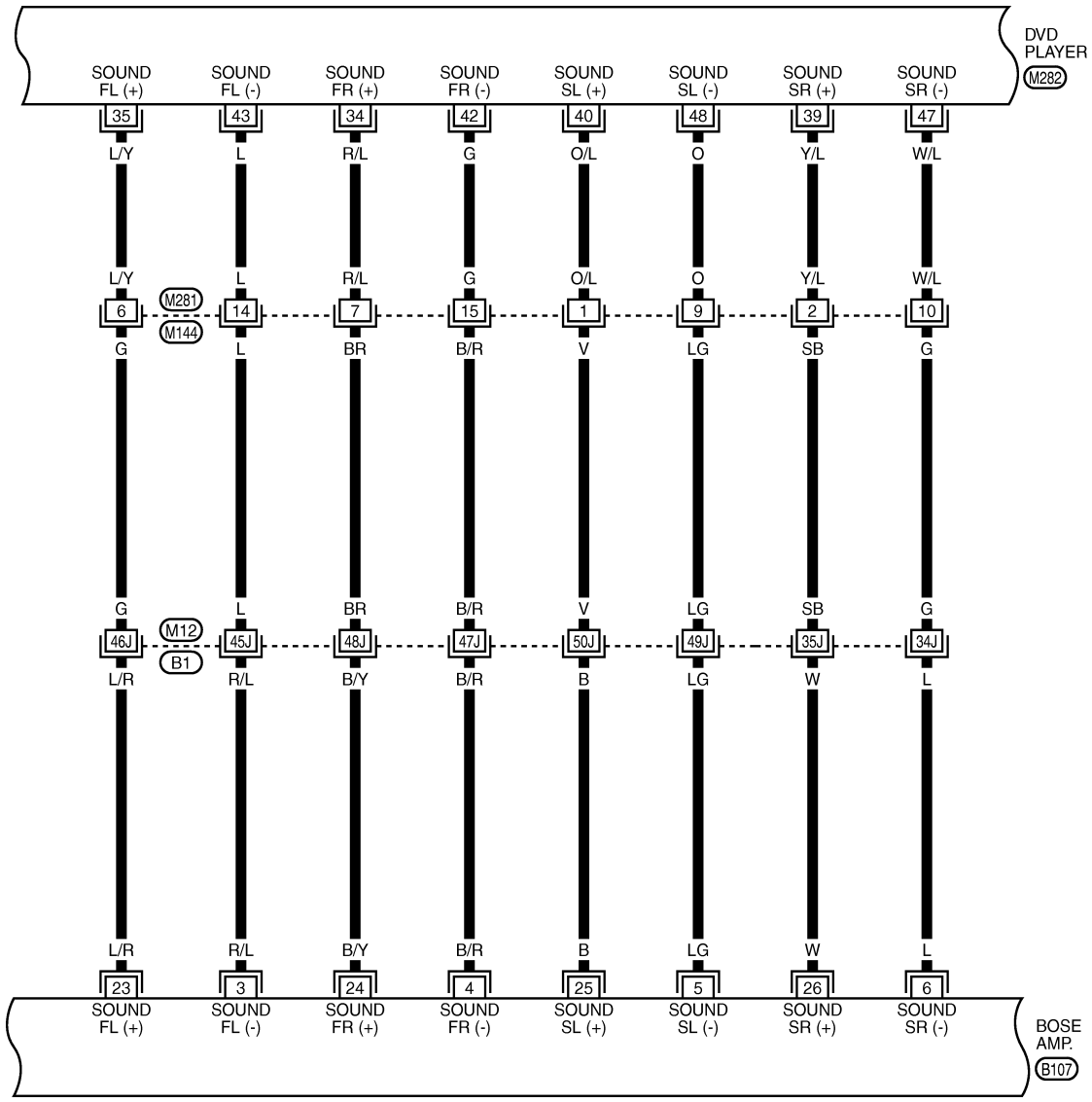


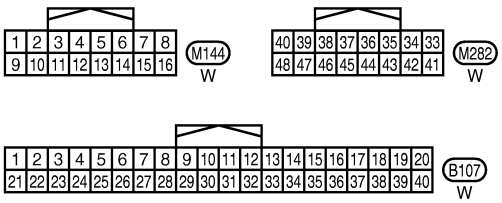
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6763E

AV-AV-81

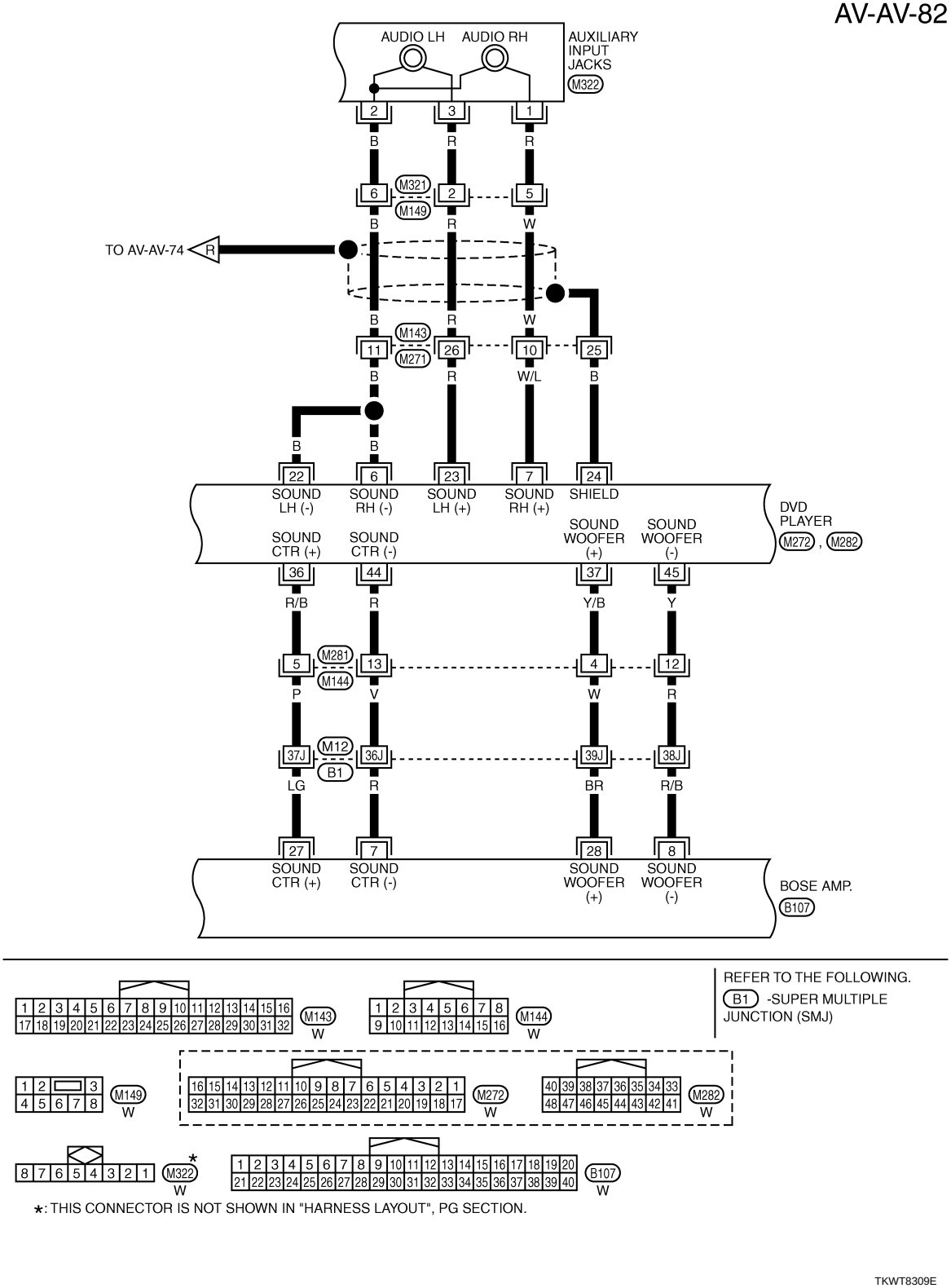




REFER TO THE FOLLOWING.
(B1) - SUPER MULTIPLE JUNCTION (SMJ)

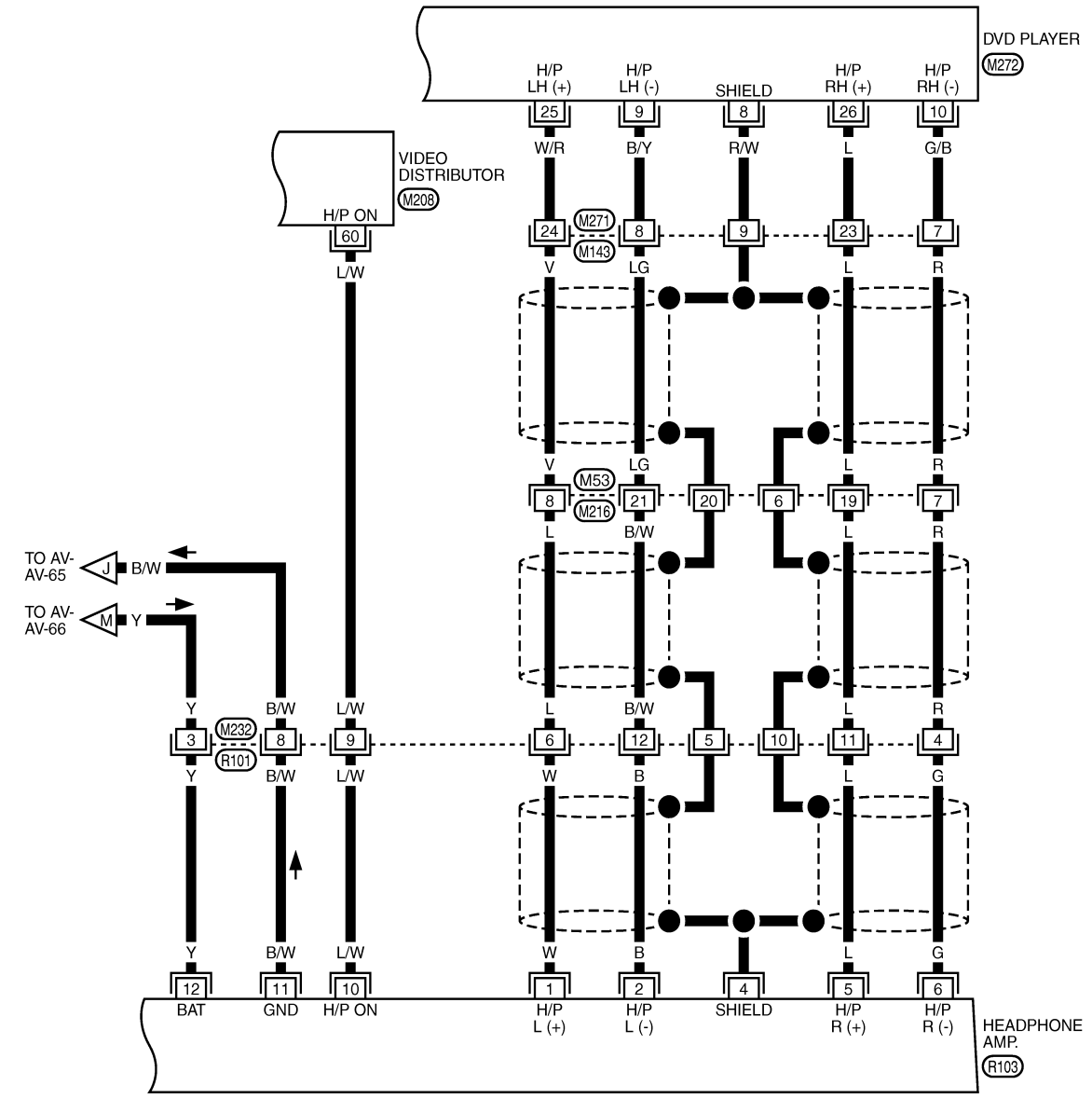
TKWT6764E

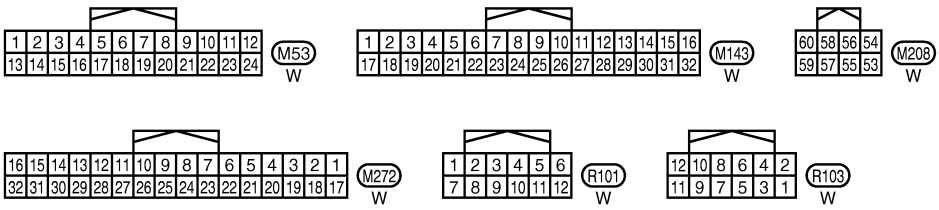
AV-AV-82



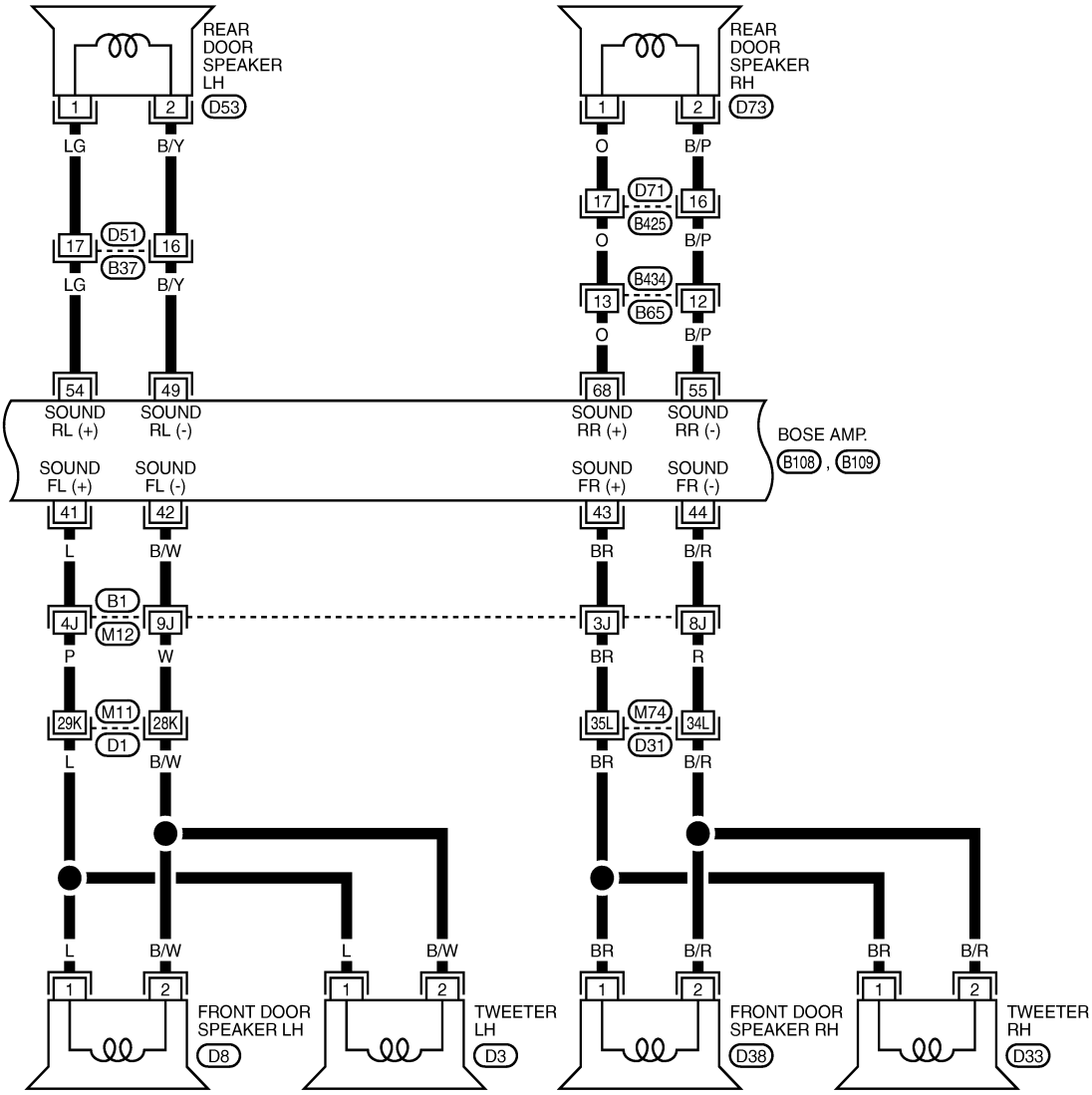
TKWT8309E

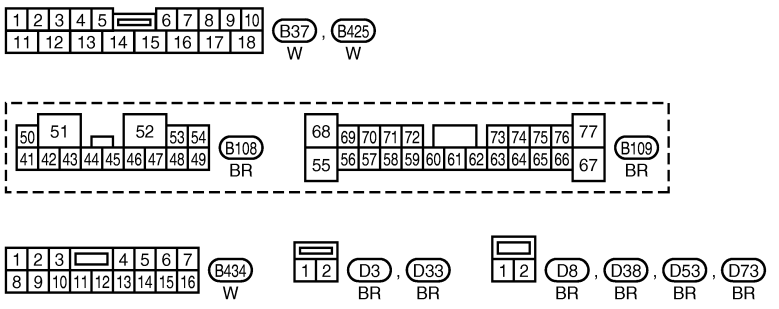
AV-AV-83





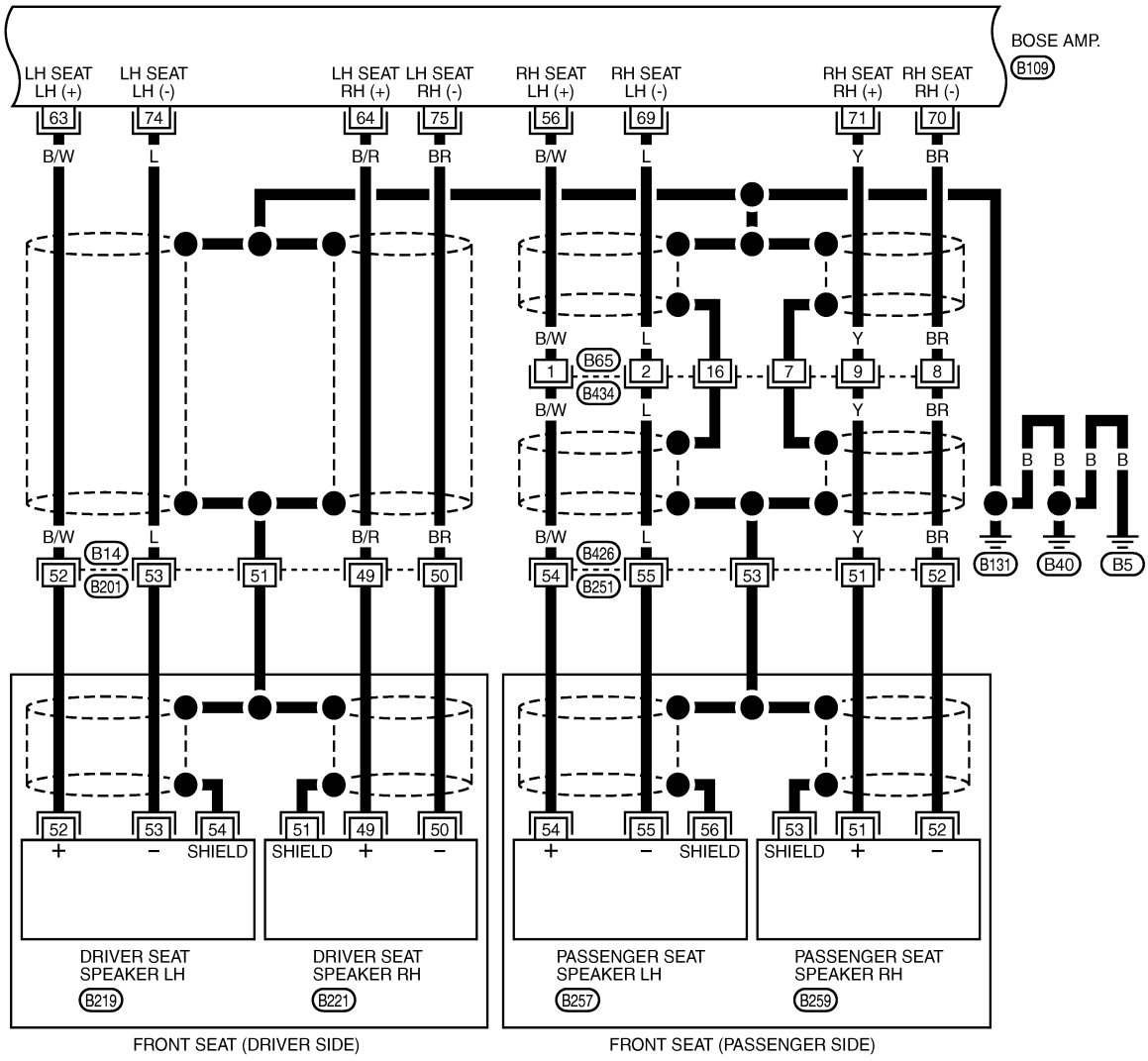
TKWT6766E

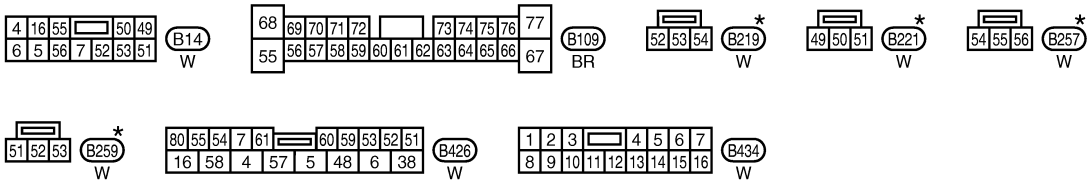




REFER TO THE FOLLOWING.
B1 , D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6767E

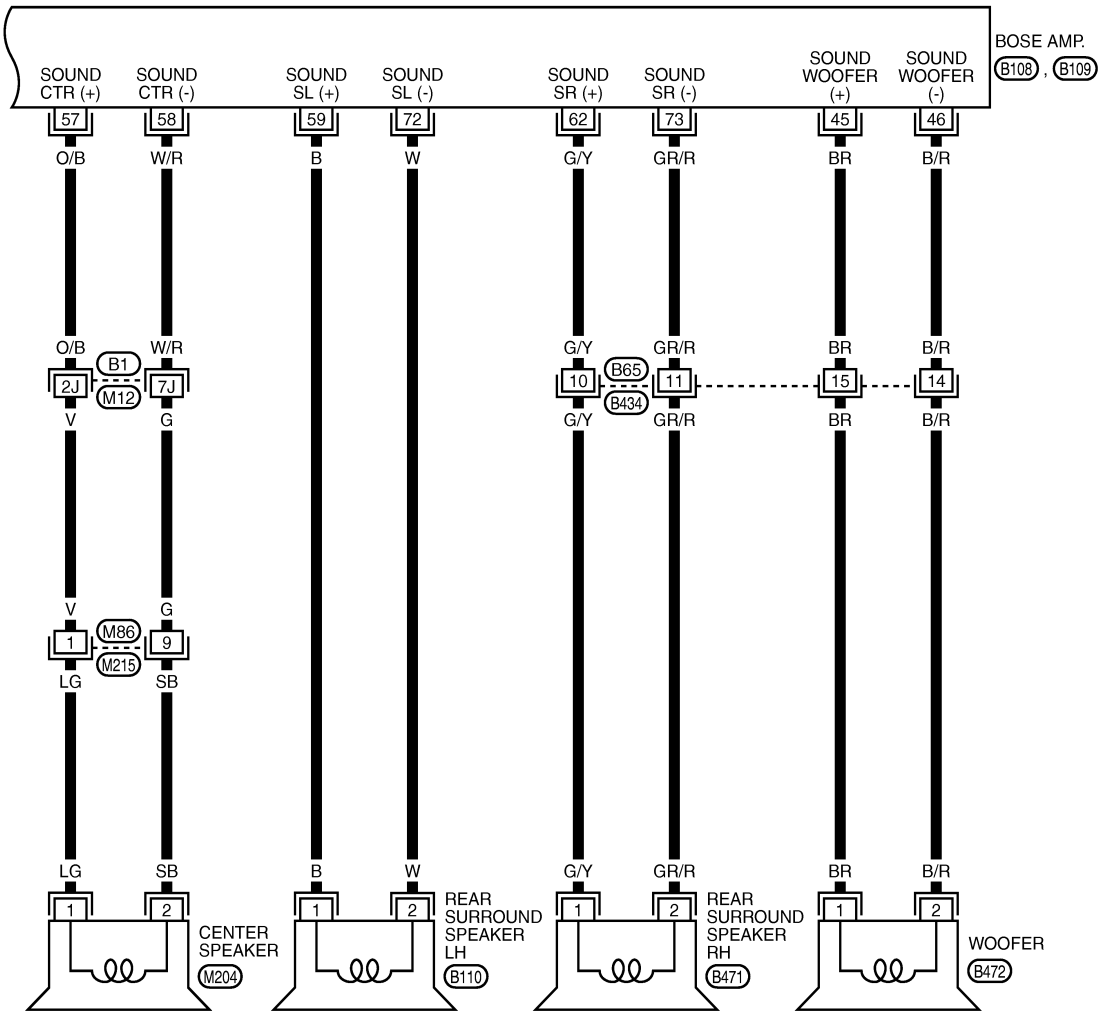


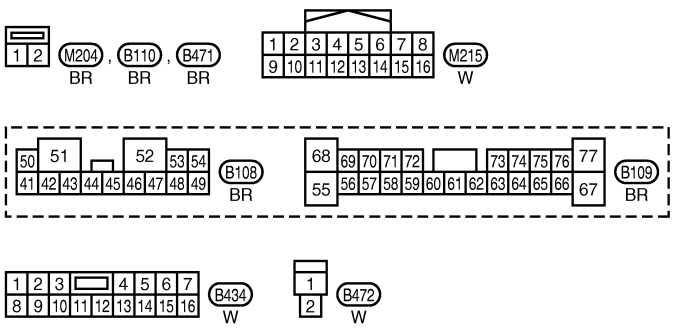


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6768E

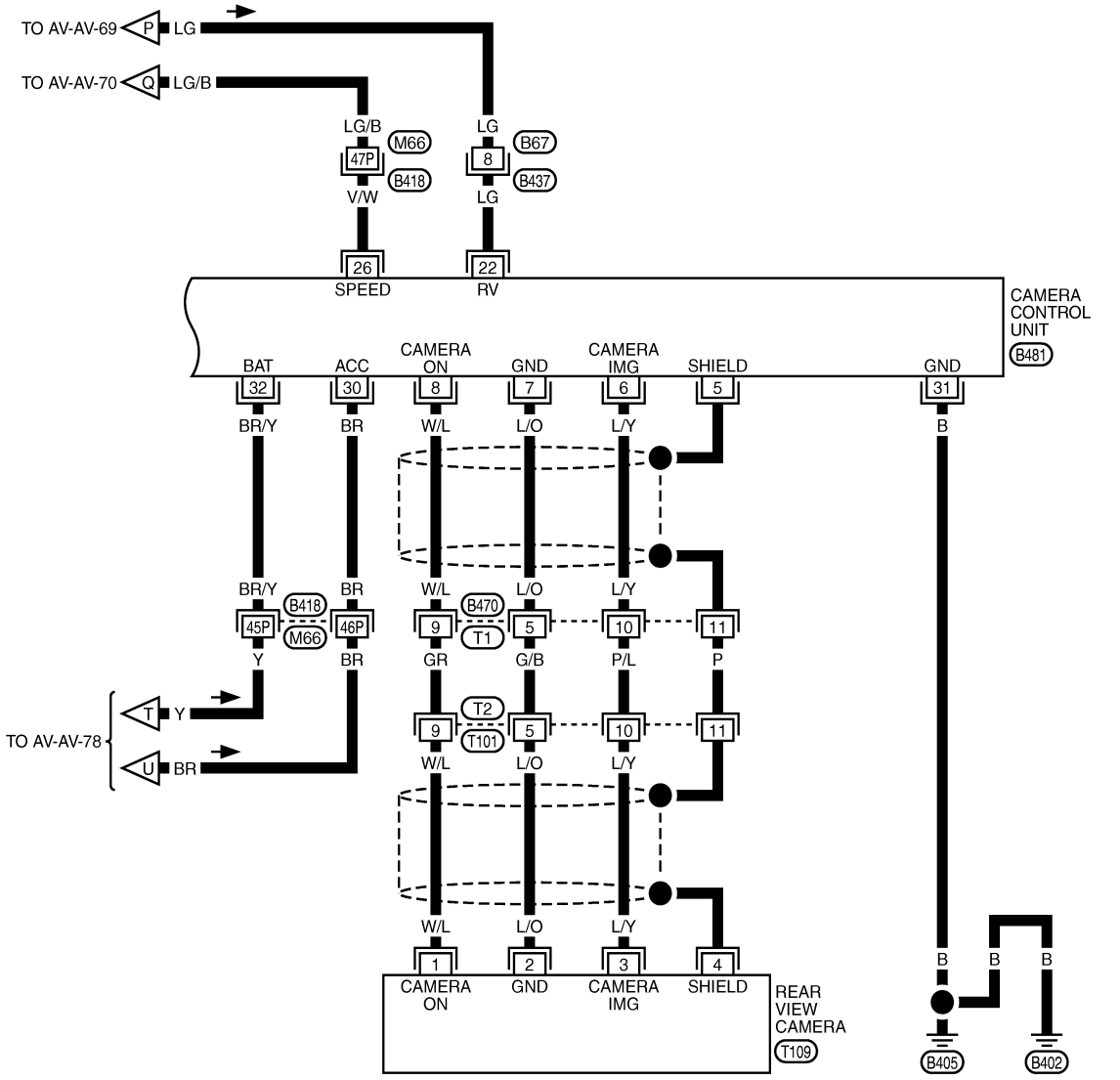
AV-AV-86

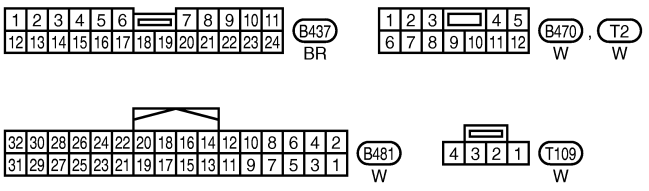




REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6769E





REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

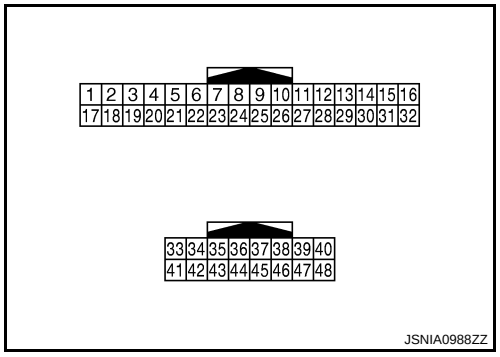
TKWT6770E

DVD PLAYER

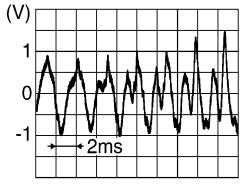
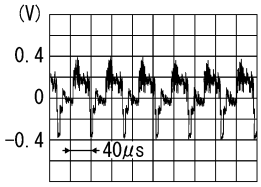
Reference Value

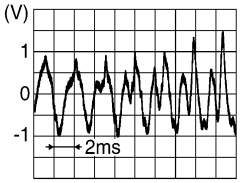
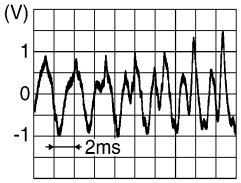
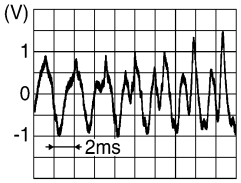
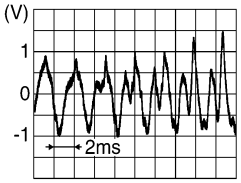
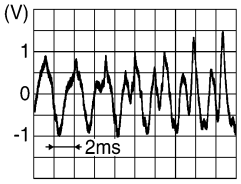
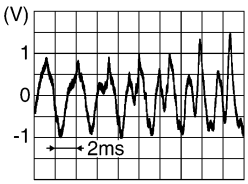
INFOID:0000000004156106

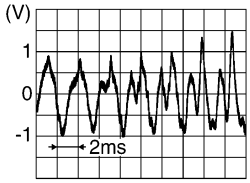
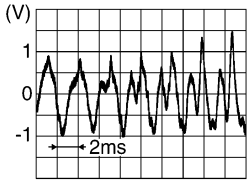
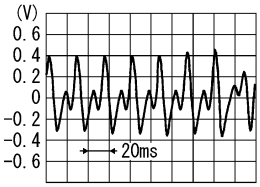
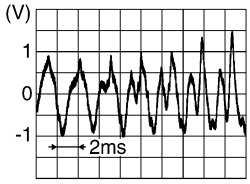
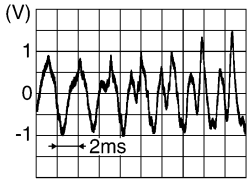
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
2 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
7 (W/L)	6 (B)	AUX sound signal RH	Input	Ignition switch ON	AUX sound output.	 SKIB3609E
8	—	Shield	—	—	—	—
14	—	Shield	—	—	—	—
15 (Y)	—	AV communication signal (H)	Input/ Output	—	—	—
16 (W)	—	AV communication signal (H)	Input/ Output	—	—	—
17 (B/P)	Ground	Ground	—	Ignition switch ON	—	0 V
18 (R/L)	Ground	Illumination signal	Input	Ignition switch ON	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12 V
20 (G)	19 (B)	DVD image signal	Output	Ignition switch ON	When DVD image is displayed.	 SKIB2251J

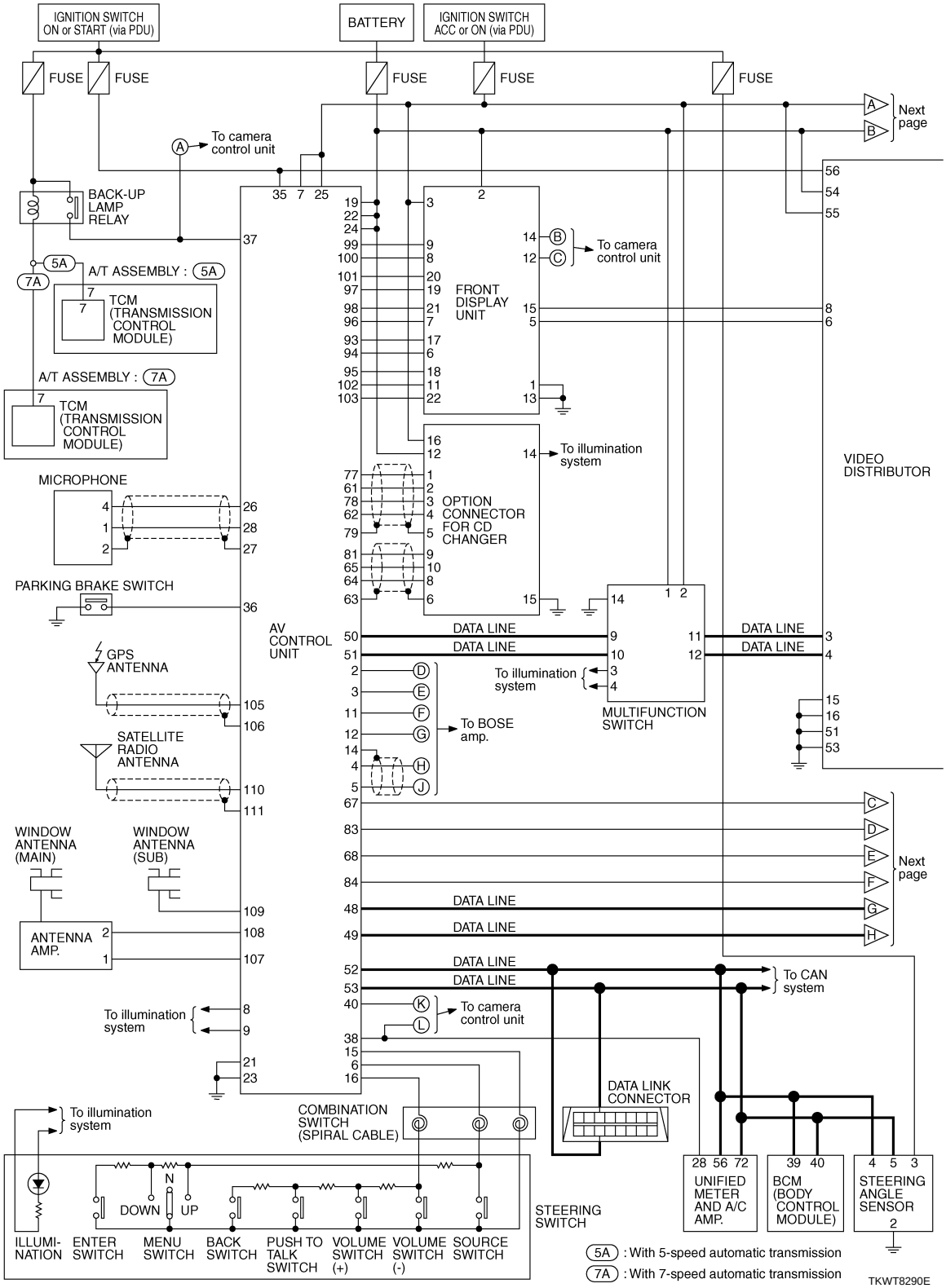
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
23 (R)	22 (B)	AUX sound signal LH	Input	Ignition switch ON	AUX sound output.	 SKIB3609E
24	—	Shield	—	—	—	—
25 (W/R)	9 (B/Y)	Headphone sound signal LH	Output	Ignition switch ON	Headphone sound output.	 SKIB3609E
26 (L)	10 (G/B)	Headphone sound signal RH	Output	Ignition switch ON	Headphone sound output.	 SKIB3609E
27 (B/R)	11 (BR)	BOSE 2ch models • Sound signal LH (DVD and AUX sound)	Output	Ignition switch ON	AUX or DVD sound output.	 SKIB3609E
		BOSE surround audio 5.1ch models • Sound signal LH (AUX sound)			AUX sound output.	
28 (B/W)	12 (L)	BOSE 2ch models • Sound signal RH (DVD and AUX sound)	Output	Ignition switch ON	AUX or DVD sound output.	 SKIB3609E
		BOSE surround audio 5.1ch models • Sound signal RH (AUX sound)			AUX sound output.	
31 (O)	—	AV communication signal (L)	Input/ Output	—	—	—
32 (R)	—	AV communication signal (L)	Input/ Output	—	—	—
34* (R/L)	42* (G)	DVD surround signal front RH	Output	Ignition switch ON	When the DVD player is played.	 SKIB3609E

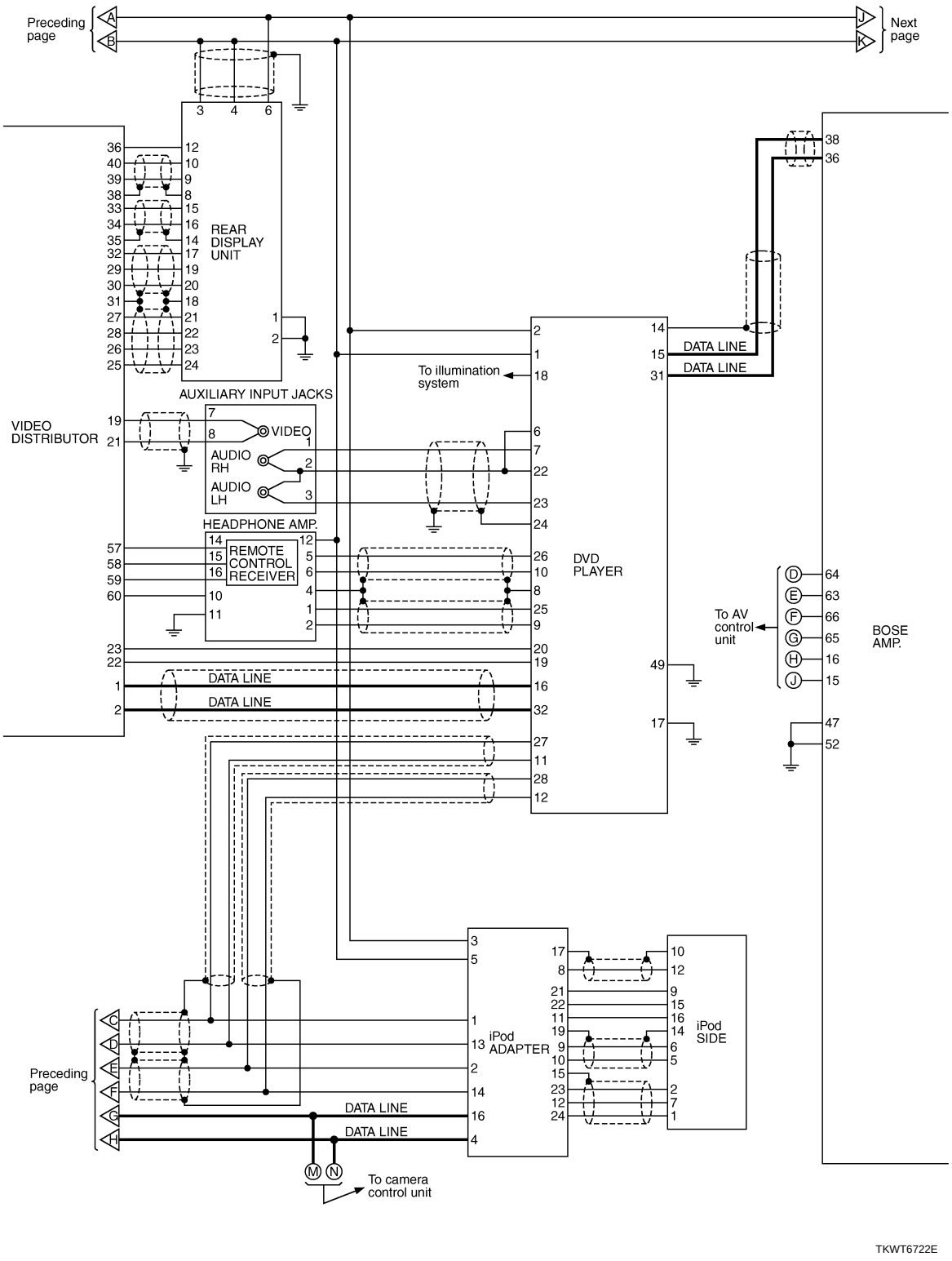
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
35* (L/Y)	43* (L)	DVD surround signal front LH	Output	Ignition switch ON	When the DVD player is played.	 SKIB3609E
36* (R/B)	44* (R)	DVD surround signal center	Output	Ignition switch ON	When the DVD player is played.	 SKIB3609E
37* (Y/B)	45* (Y)	DVD surround signal woofer	Output	Ignition switch ON	When the DVD player is played.	 PKIB6116J
39* (Y/L)	47* (W/L)	DVD surround signal rear RH	Output	Ignition switch ON	When the DVD player is played.	 SKIB3609E
40* (O/L)	48* (O)	DVD surround signal rear LH	Output	Ignition switch ON	When the DVD player is played.	 SKIB3609E
49 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

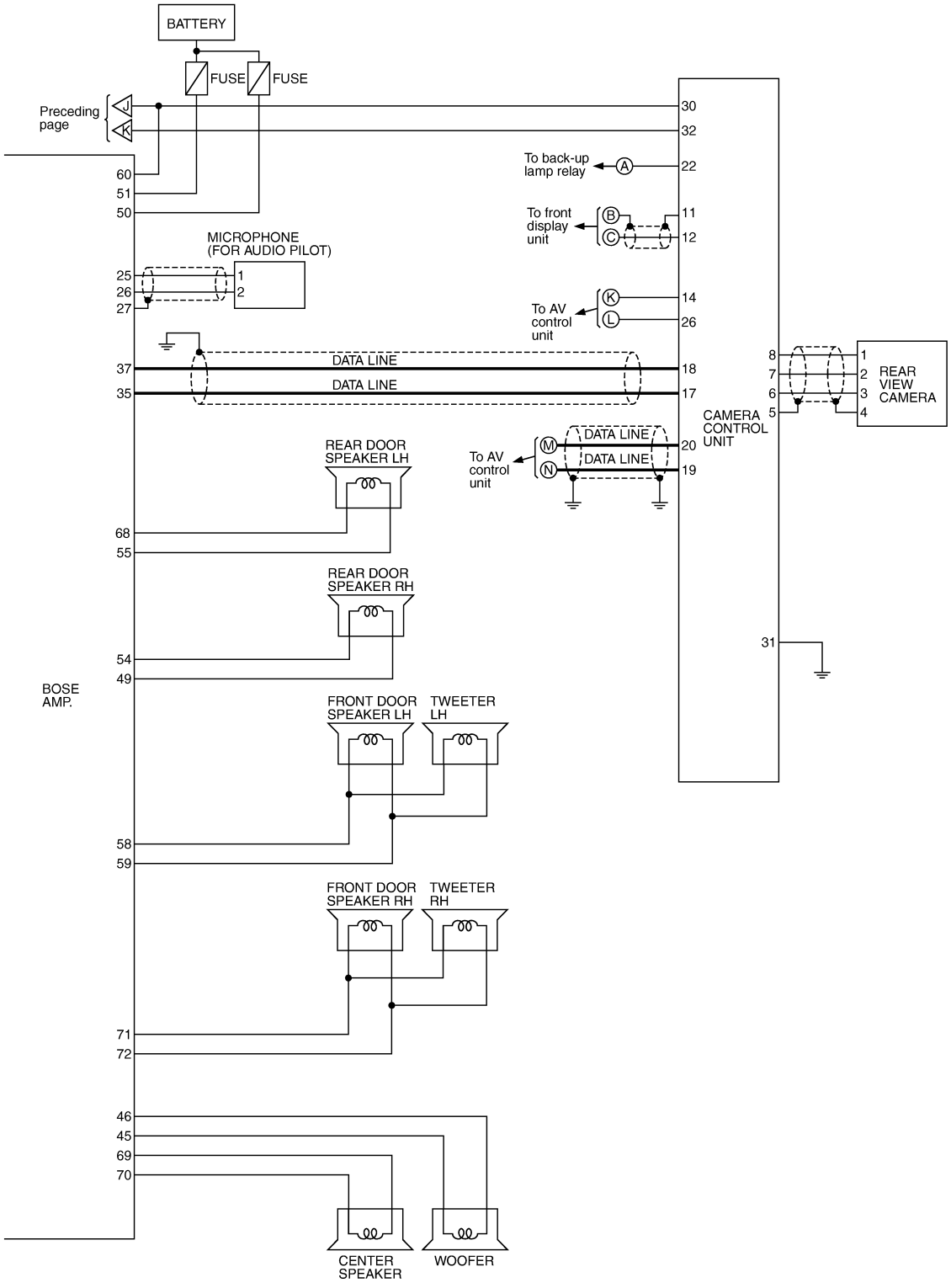
*: Only for BOSE surround audio 5.1ch system models.

Schematic - BOSE Audio 2ch System-

INFOID:0000000004391618




Preceding page
Next page
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
To illumination system
DVD PLAYER
DATA LINE
DATA LINE
DATA LINE
To AV control unit
BOSE AMP.
iPod ADAPTER
iPod SIDE
DATA LINE
DATA LINE
To camera control unit
TKWT6722E



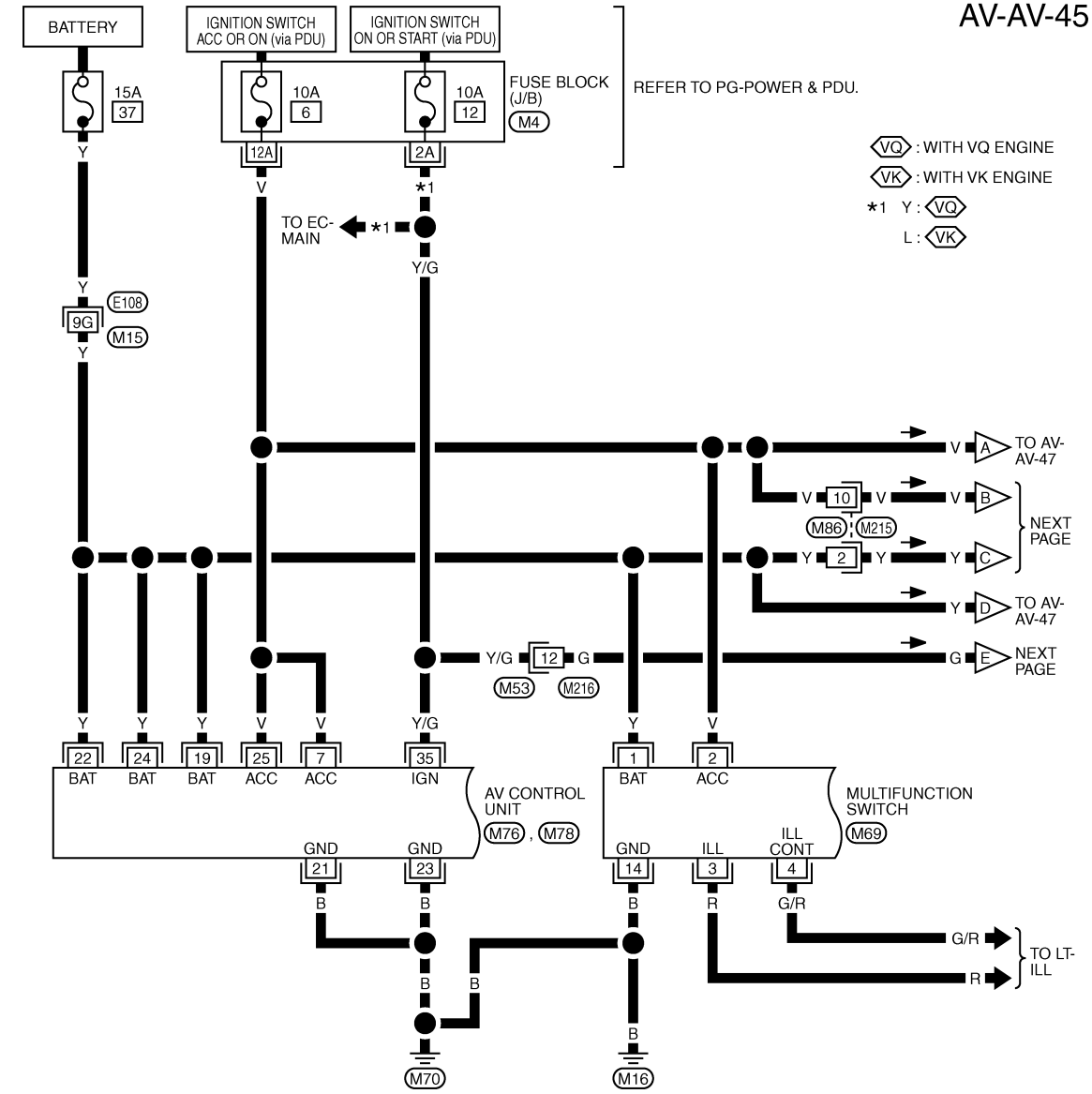
TKWT6723E

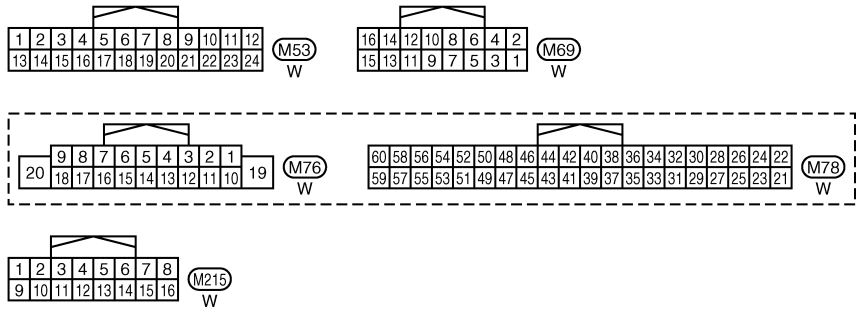
Wiring Diagram - AV - / BOSE Audio 2ch System

INFOID:0000000004391619

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

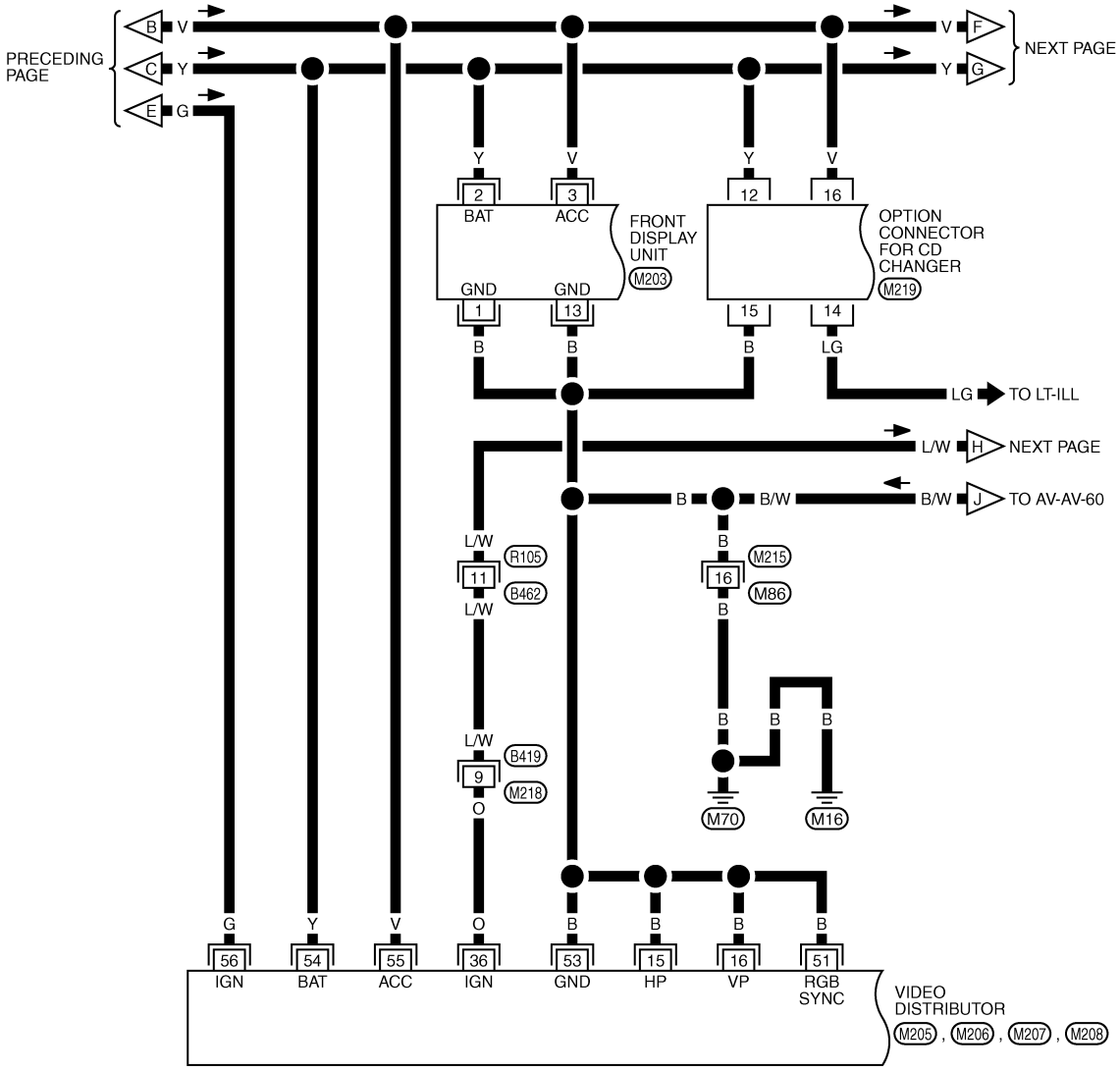


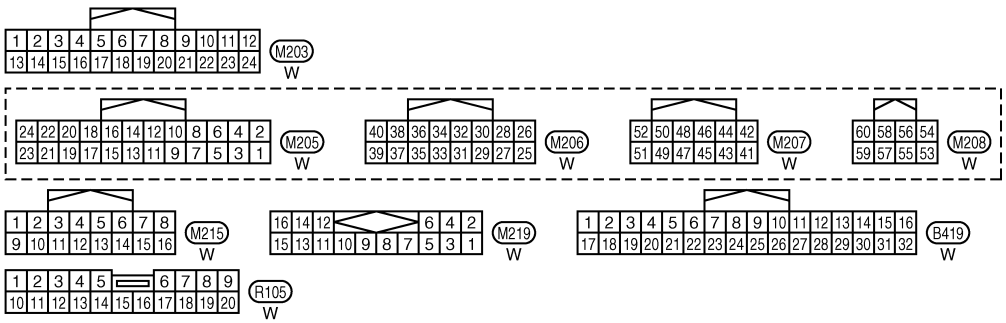


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8291E

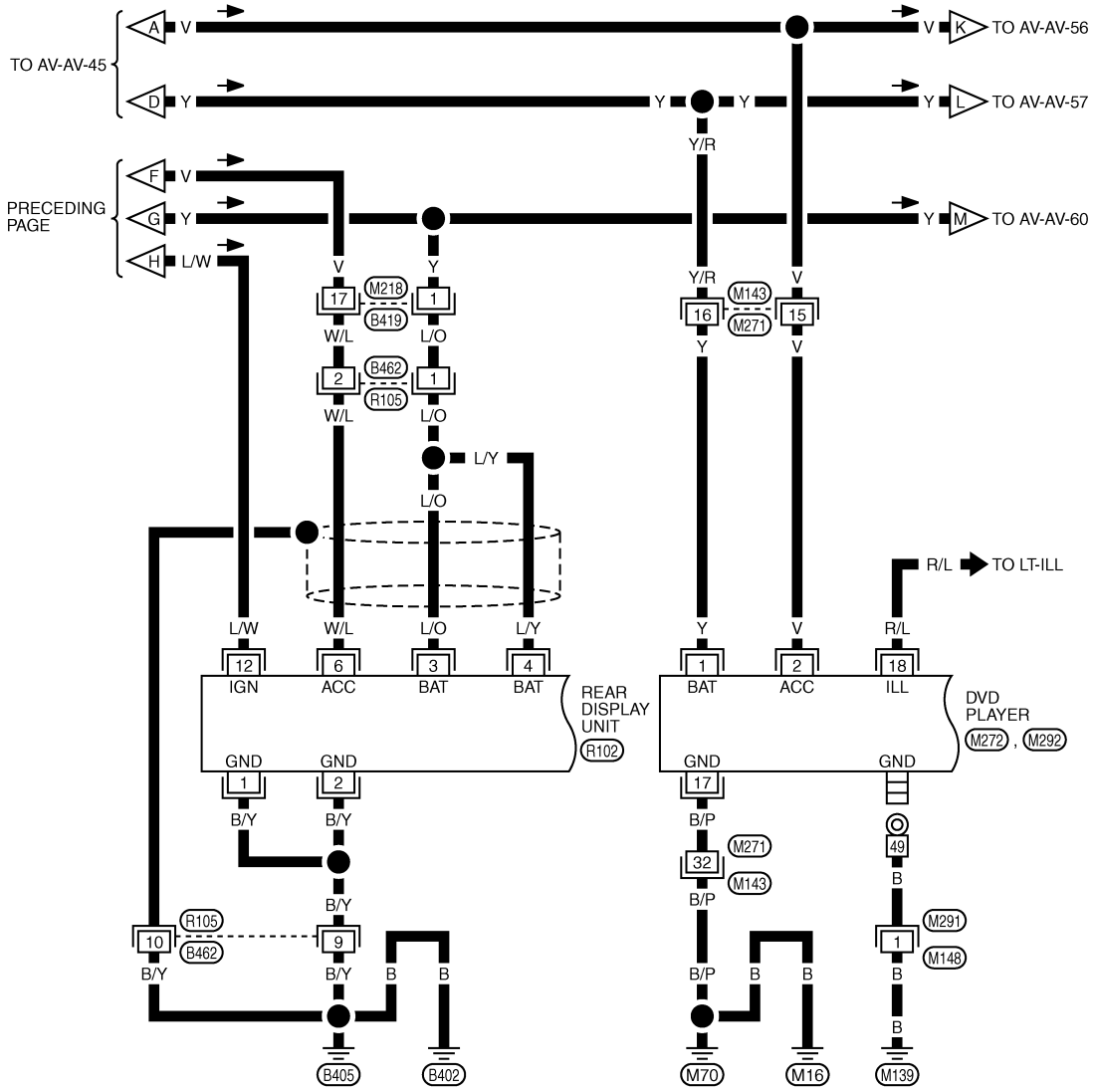
AV-AV-46

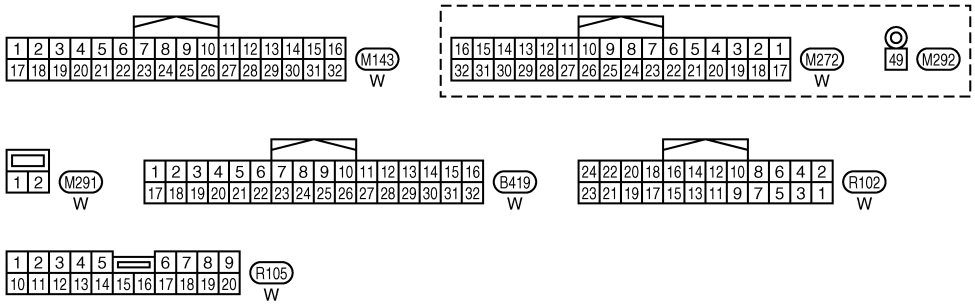




TKWT8292E

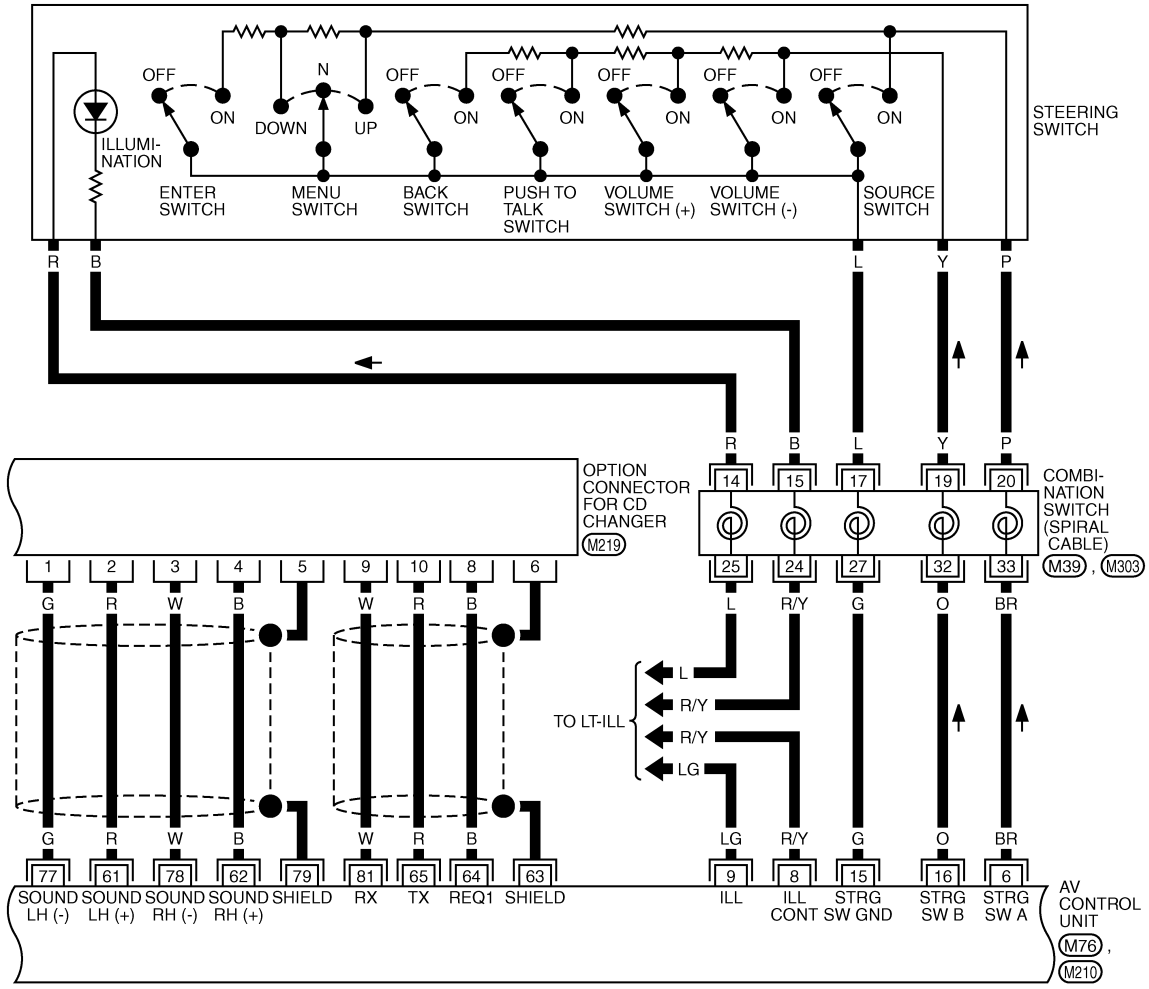
AV-AV-47

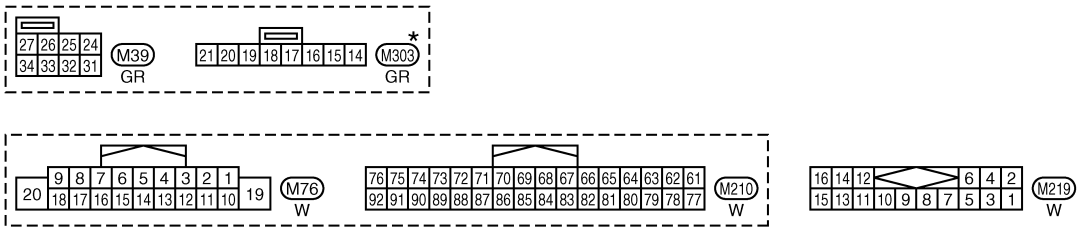




TKWT8293E

AV-AV-48

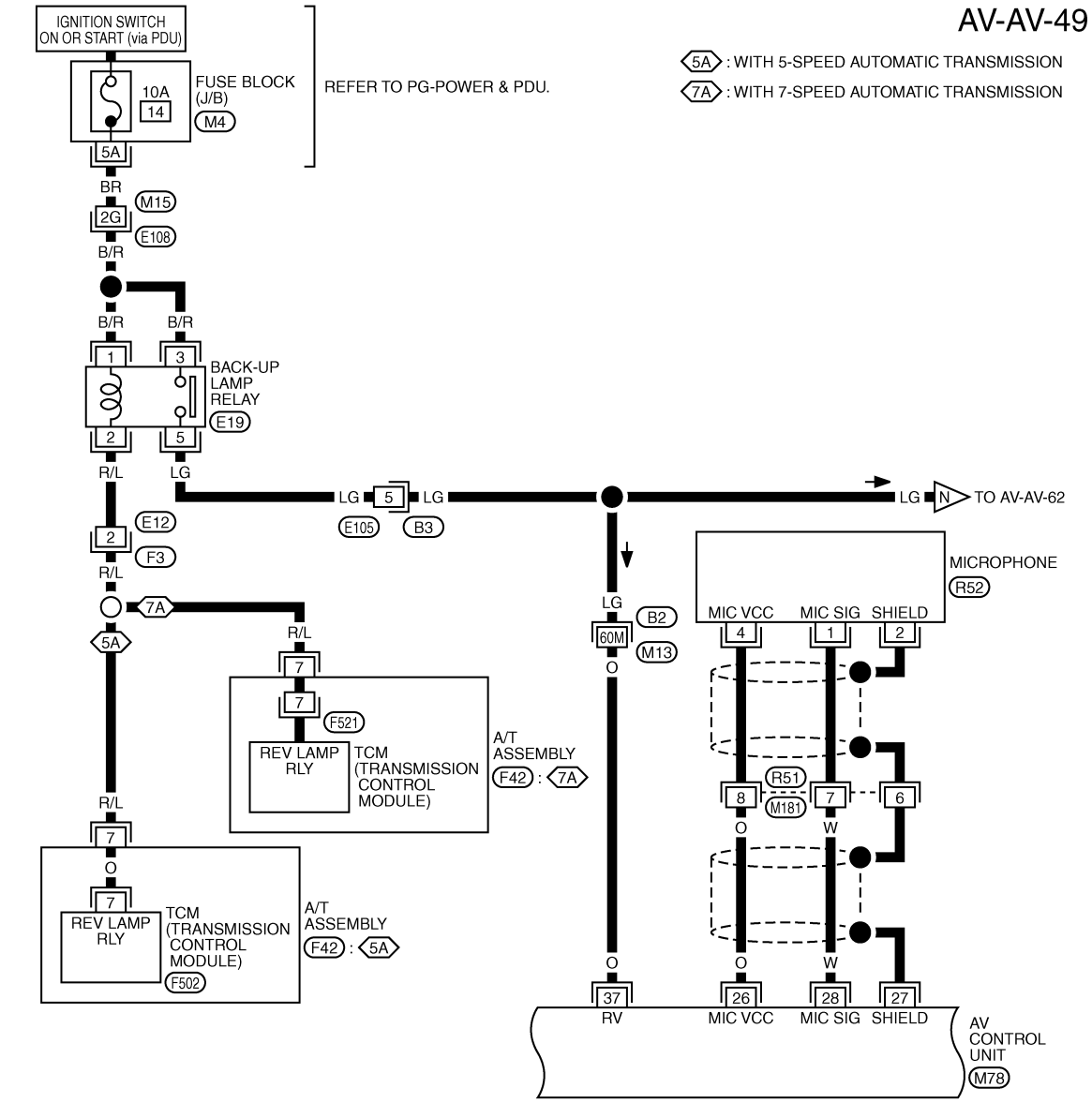




*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

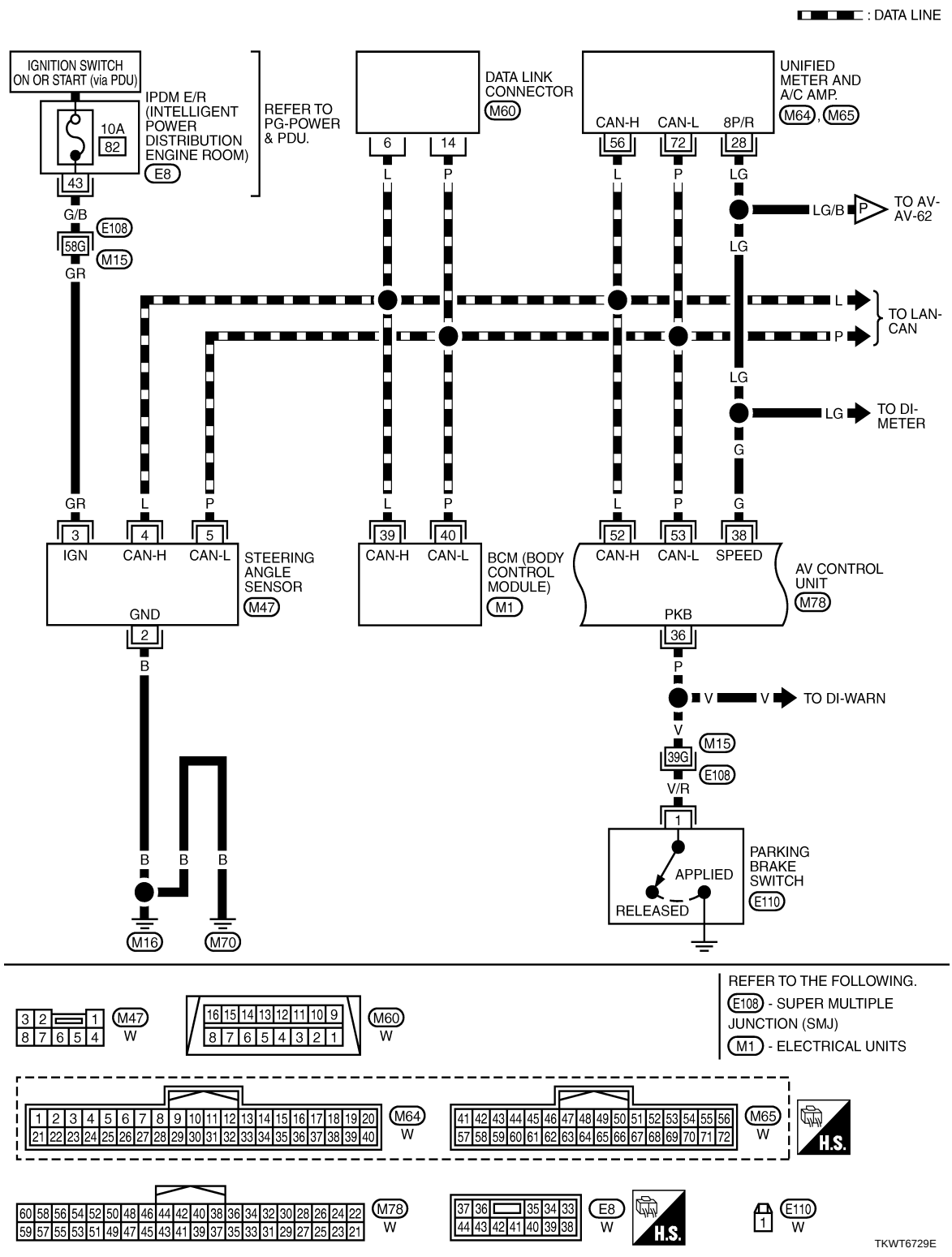
TKWT8294E

AV-AV-49

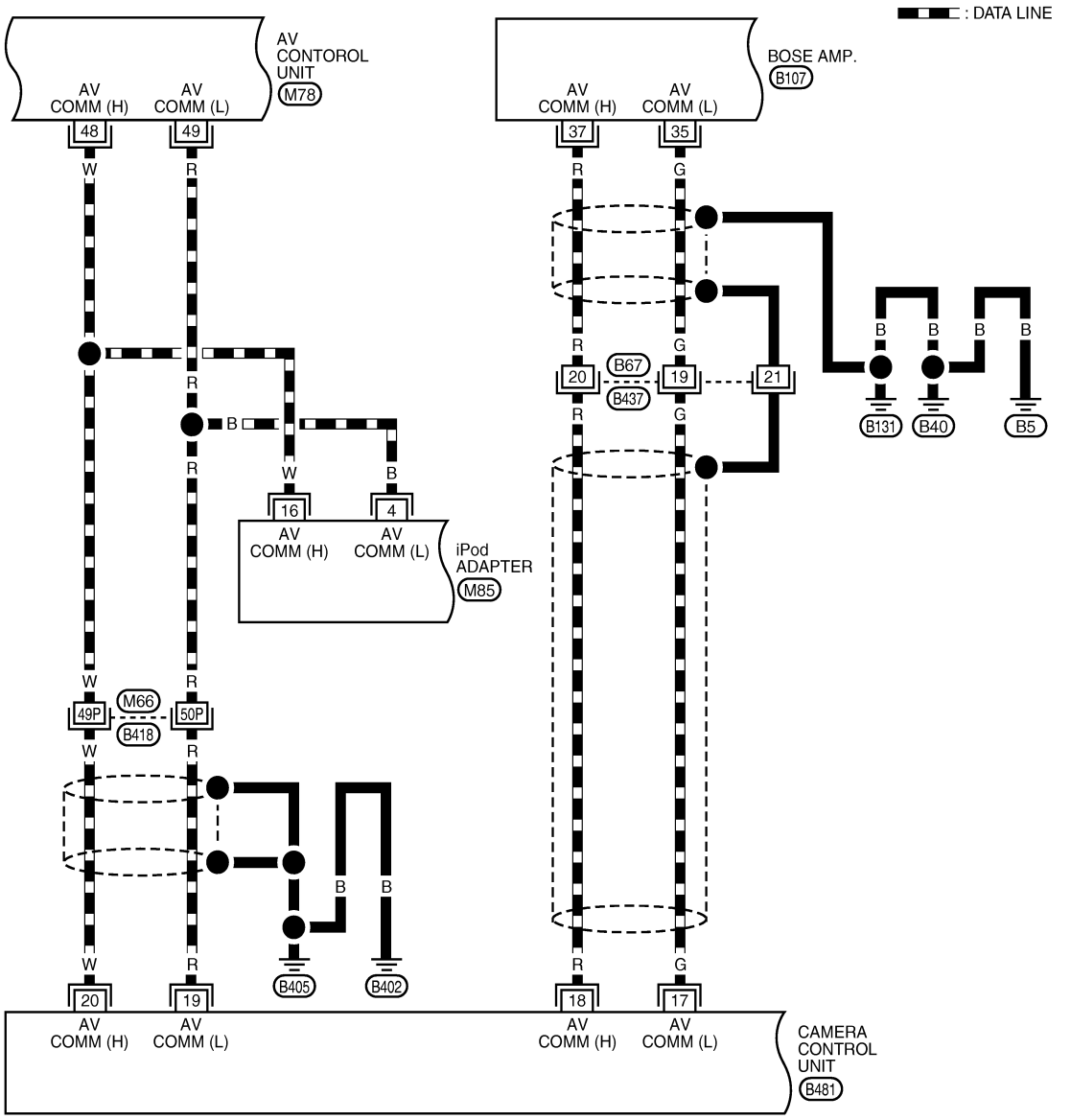


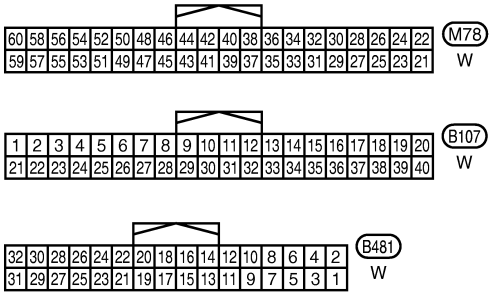
TKWT8295E

AV-AV-50


: DATA LINE
IGNITION SWITCH ON OR START (via PDU)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION ENGINE ROOM) E8
10A 82
43
REFER TO PG-POWER & PDU.
G/B
E108
58G
M15
GR
DATA LINK CONNECTOR M60
6
14
L
P
UNIFIED METER AND A/C AMP. M64, M65
CAN-H CAN-L 8P/R
56
72
28
L
P
LG
LG/B P
TO AV-AV-62
LG
L
P
TO LAN-CAN
LG
LG
TO DI-METER
G
GR L P
3 4 5
IGN CAN-H CAN-L
STEERING ANGLE SENSOR M47
GND
2
B
L P
39 40
CAN-H CAN-L
BCM (BODY CONTROL MODULE) M1
L P G
52 53 38
CAN-H CAN-L SPEED
AV CONTROL UNIT M78
PKB
36
P
V
V
TO DI-WARN
V
39G
M15
E108
V/R
1
PARKING BRAKE SWITCH E110
APPLIED
RELEASED
B B B
M16
M70
REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS
M47 W
M60 W
M64 W
M65 W
H.S.
M78 W
E8 W
E110 W
TKWT6729E

AV-AV-51

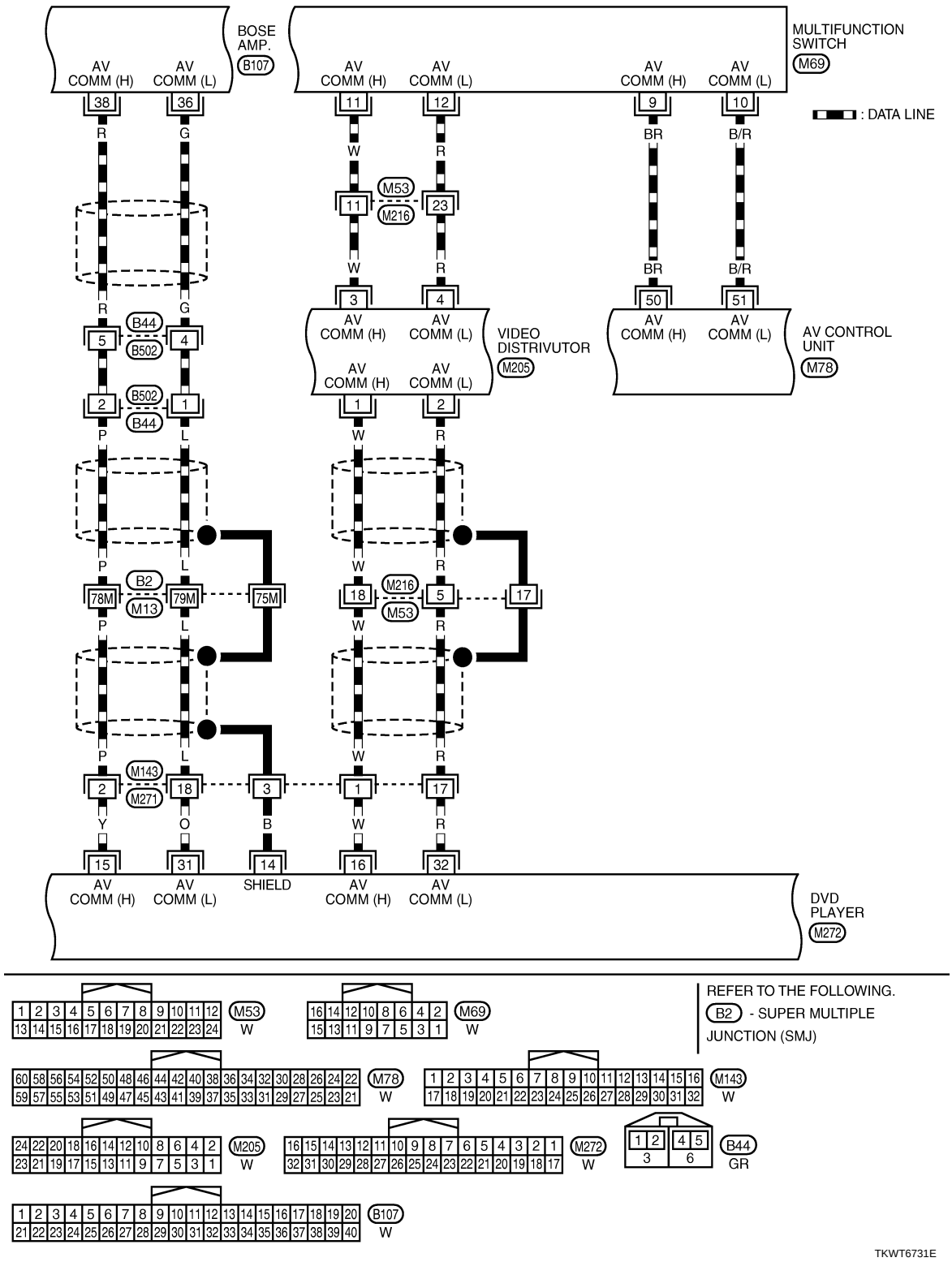




REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

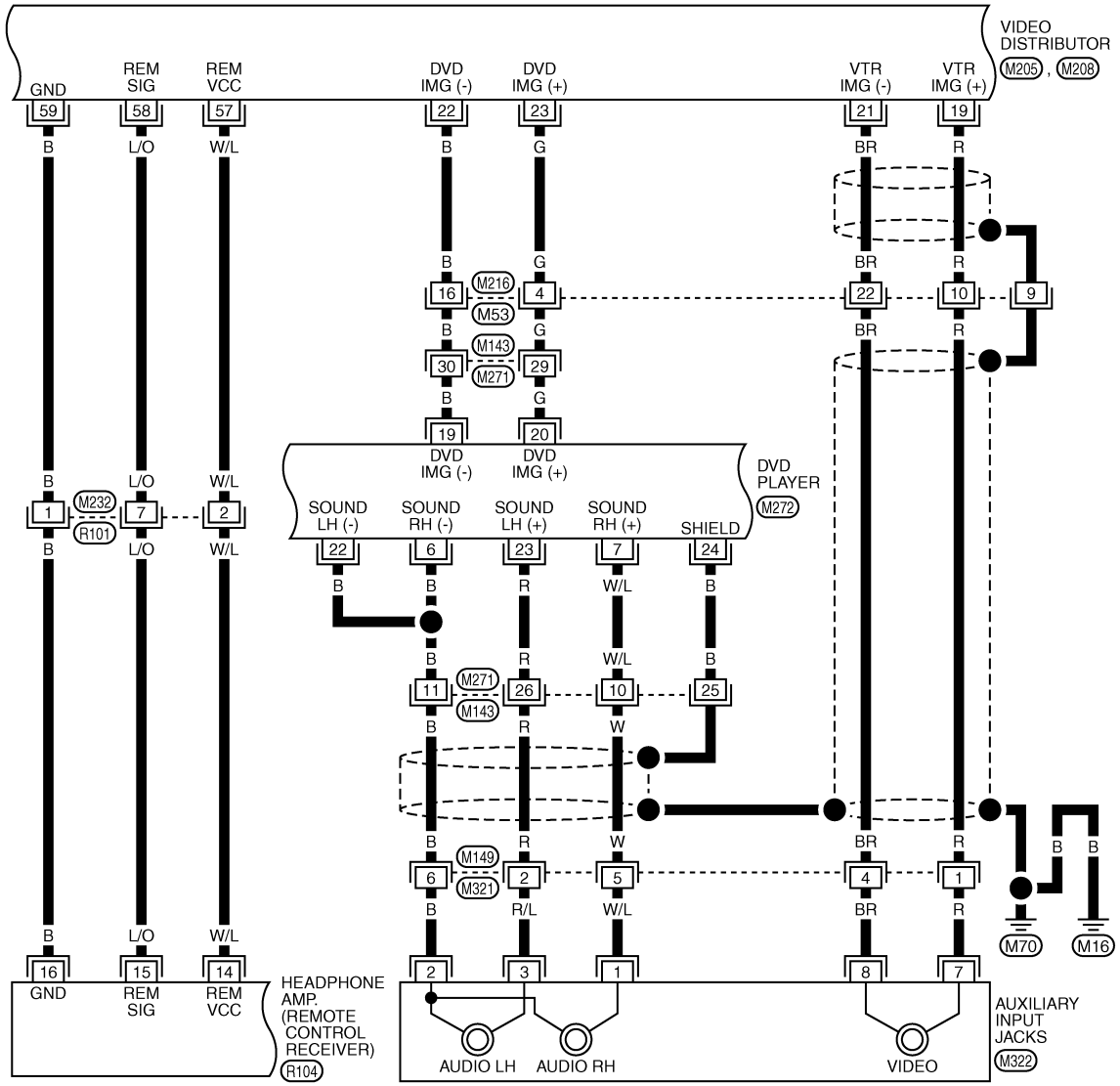
TKWT6730E

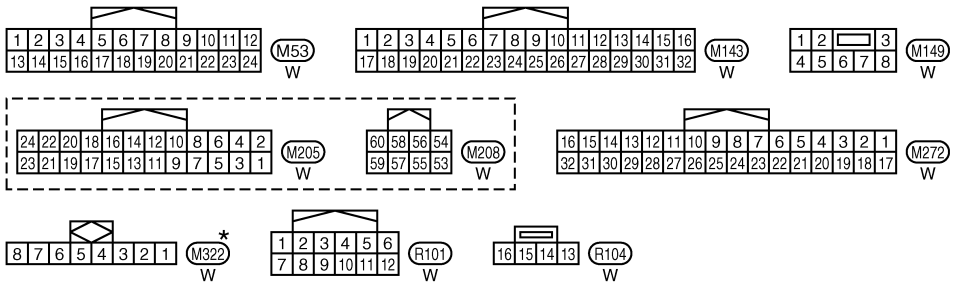
AV-AV-52



TKWT6731E

AV-AV-53

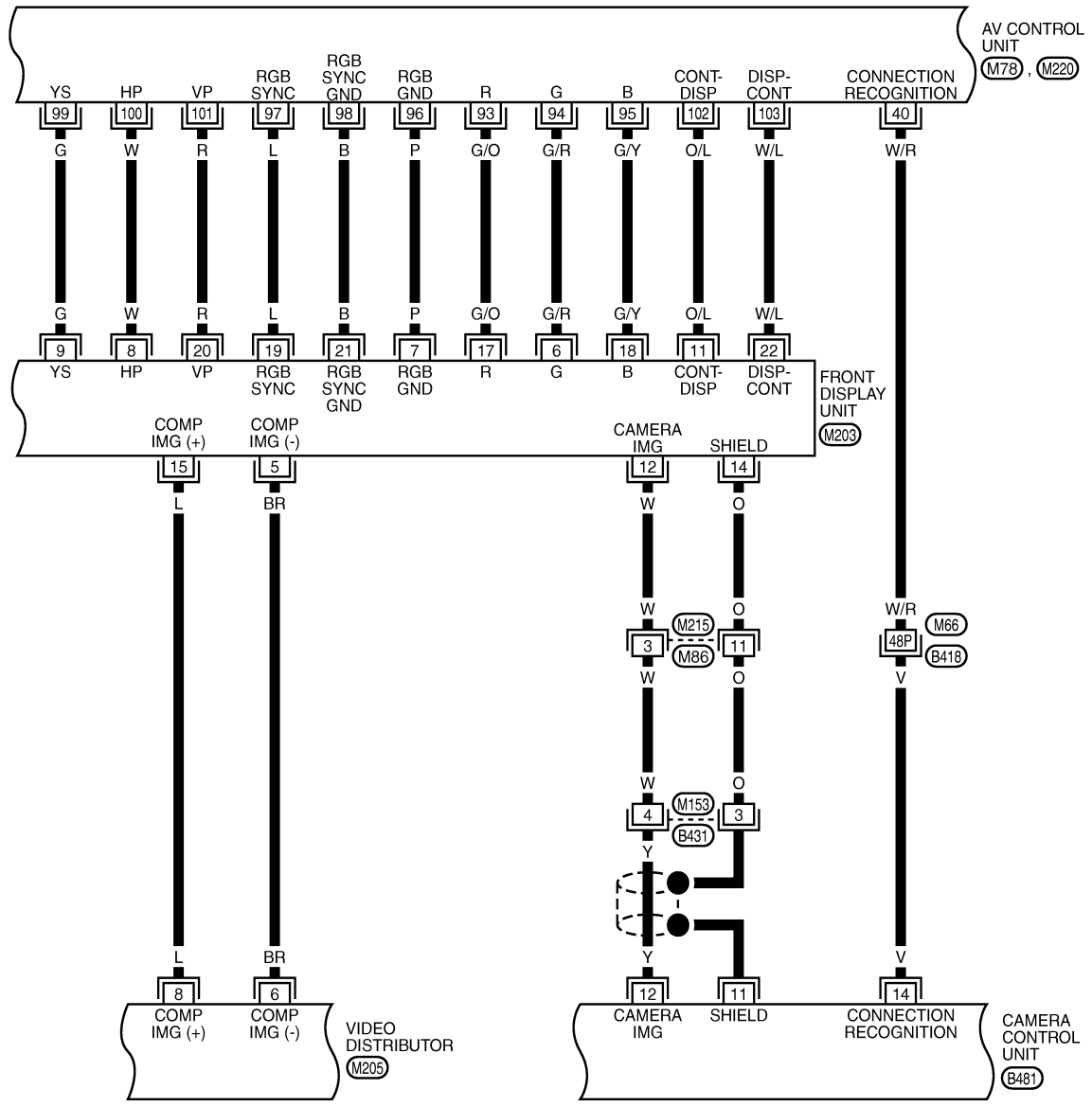


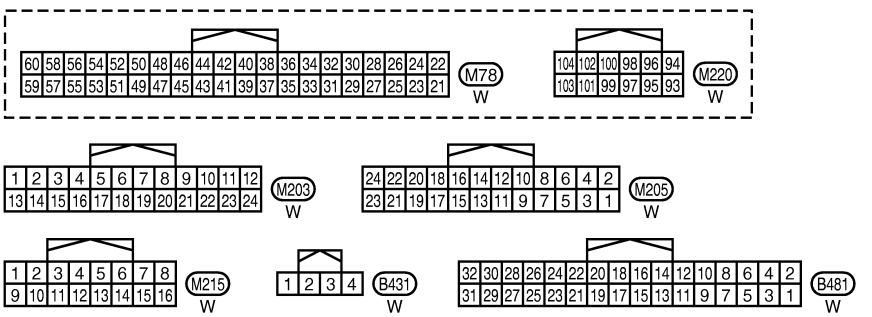


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8296E

AV-AV-54

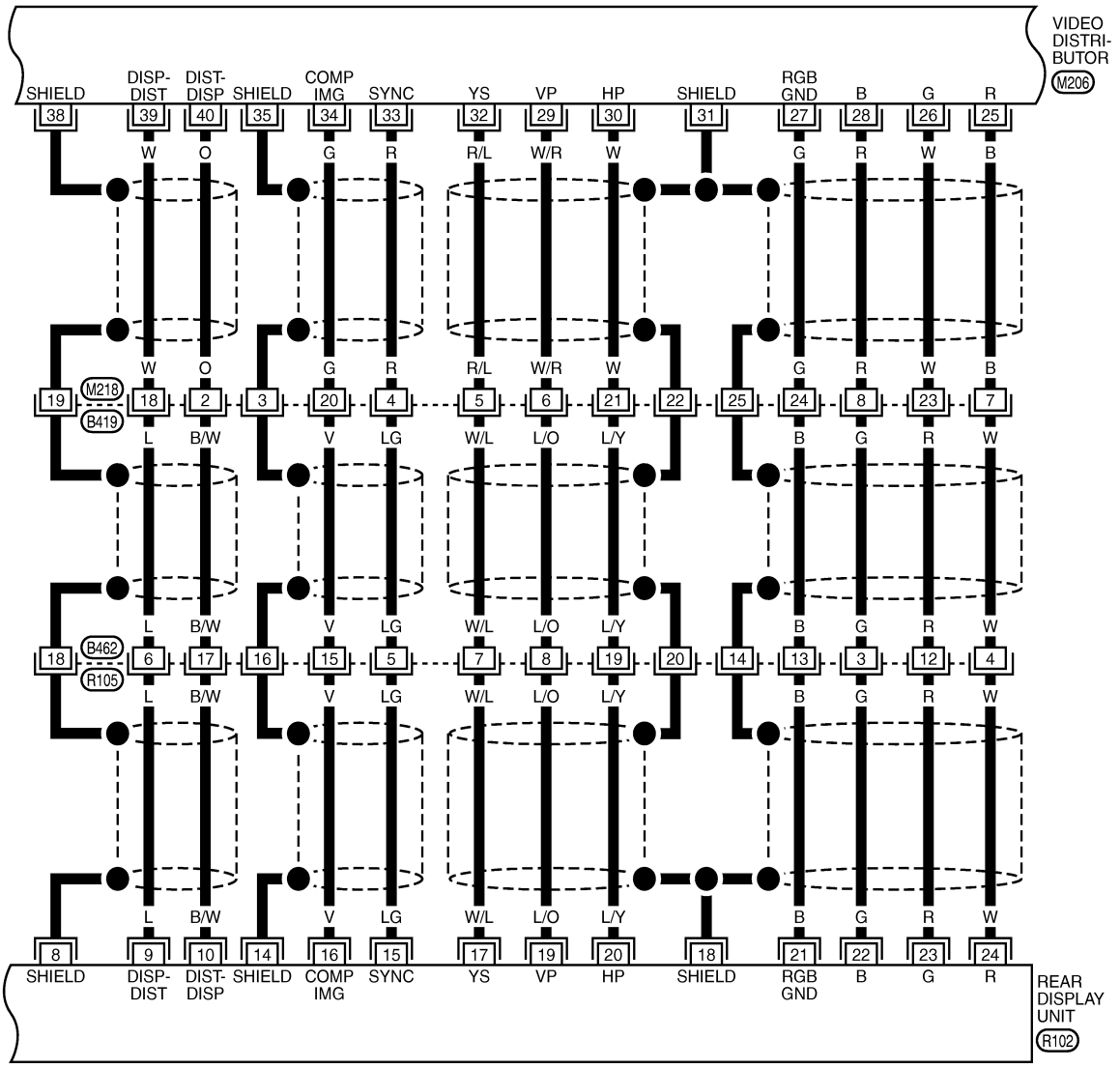


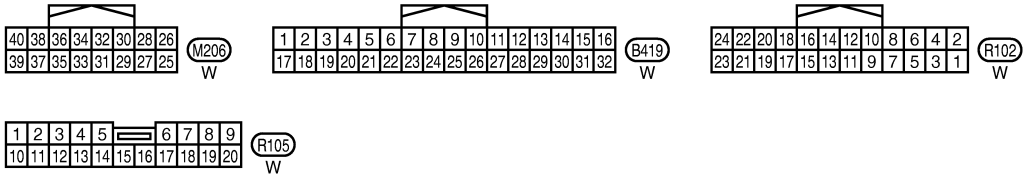


REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT6733E

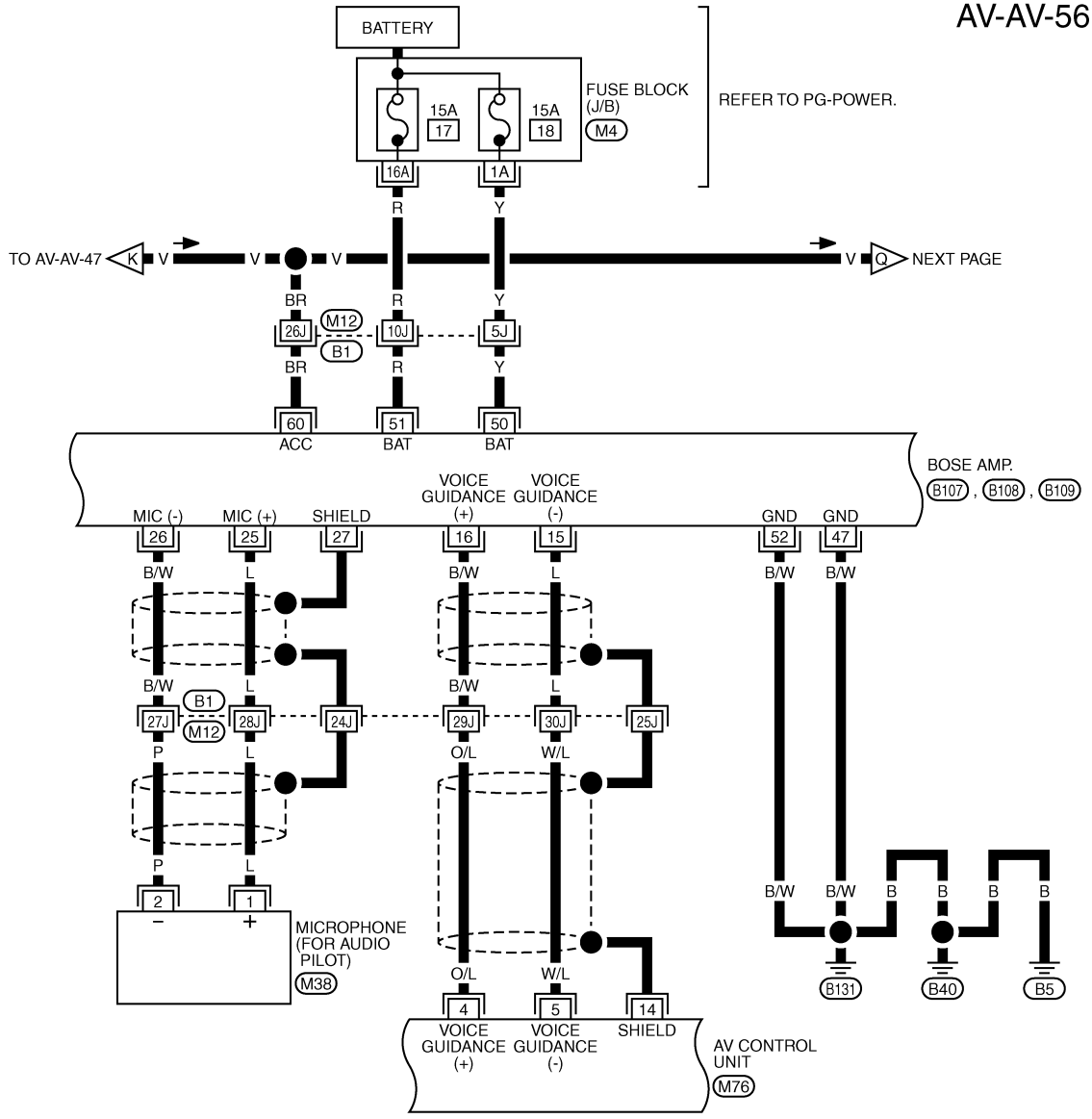
AV-AV-55

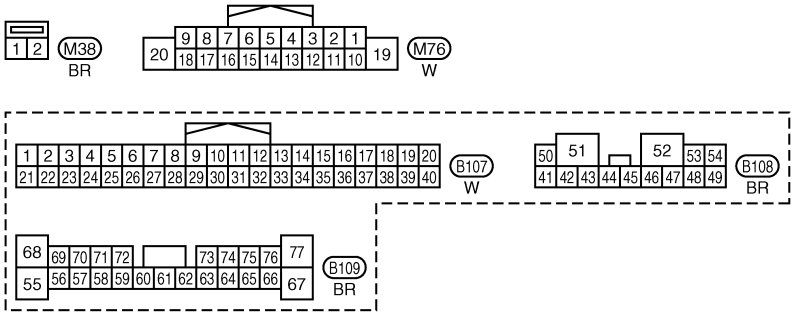




TKWT6734E

AV-AV-56



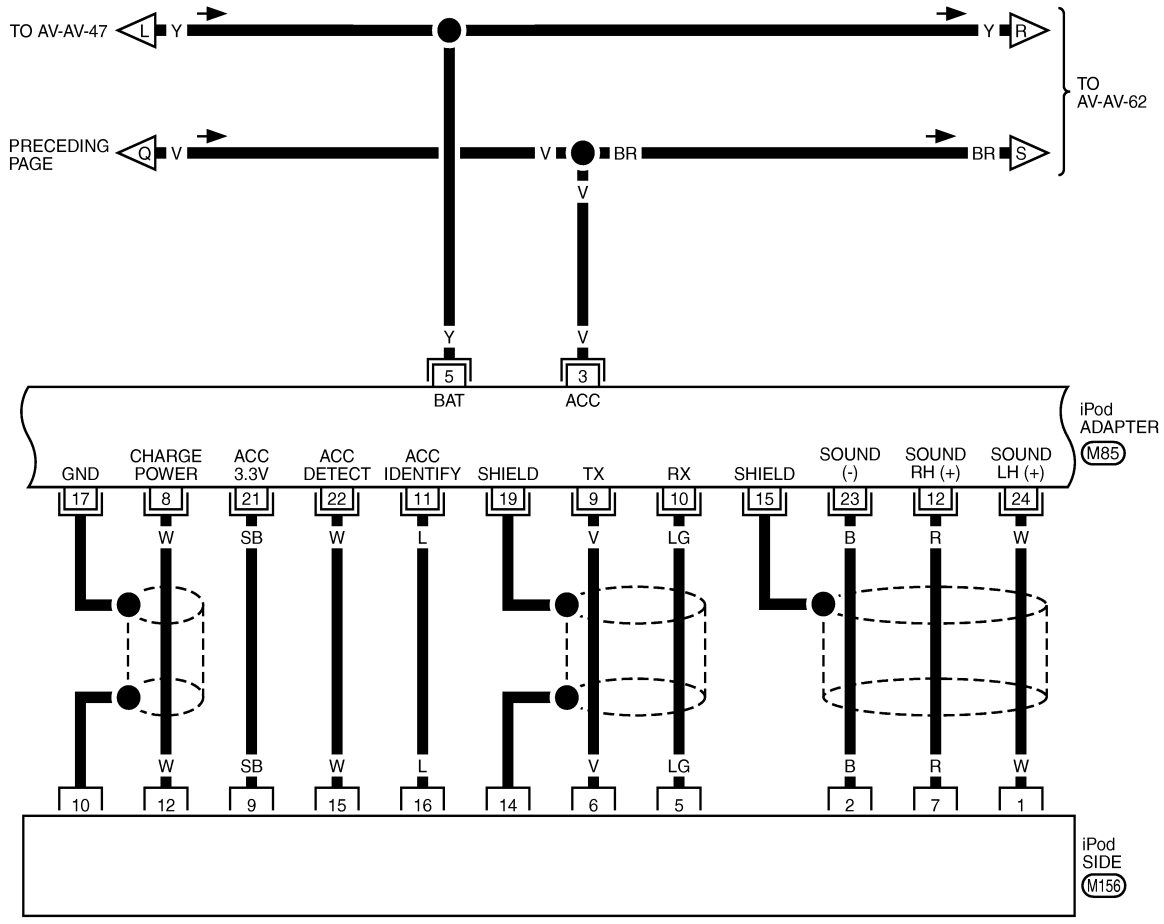


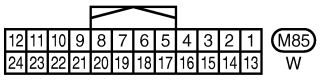
REFER TO THE FOLLOWING.

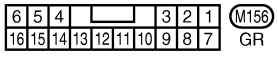
B1 -SUPER MULTIPLE JUNCTION (SMJ)

M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8297E

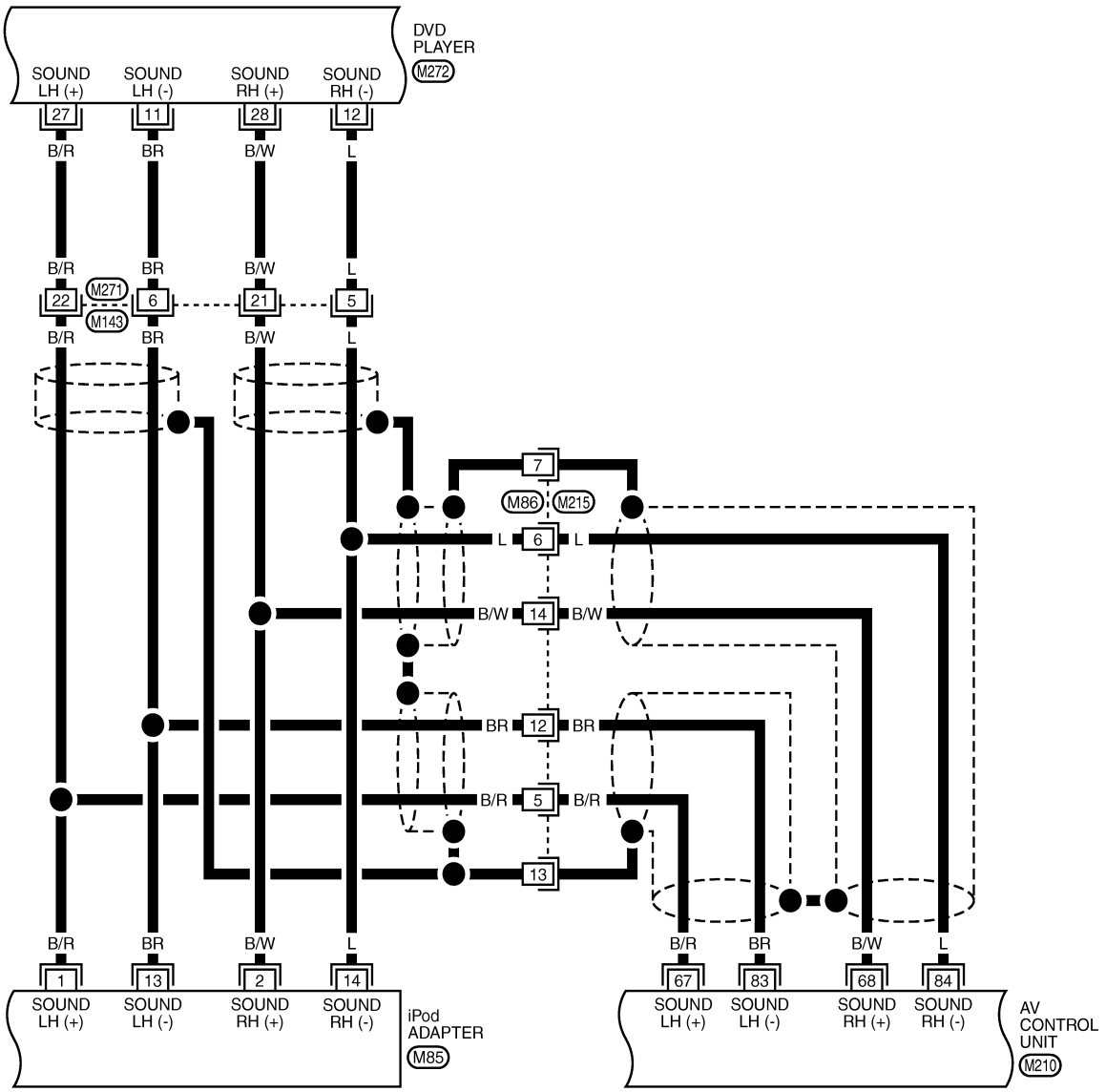

TO AV-AV-47
L
Y
Y
R
TO
AV-AV-62
PRECEDING
PAGE
Q
V
V
BR
BR
S
V
Y
V
5
BAT
3
ACC
iPod
ADAPTER
M85
GND
CHARGE
POWER
ACC
3.3V
ACC
DETECT
ACC
IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND
(-)
SOUND
RH (+)
SOUND
LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod
SIDE
M156

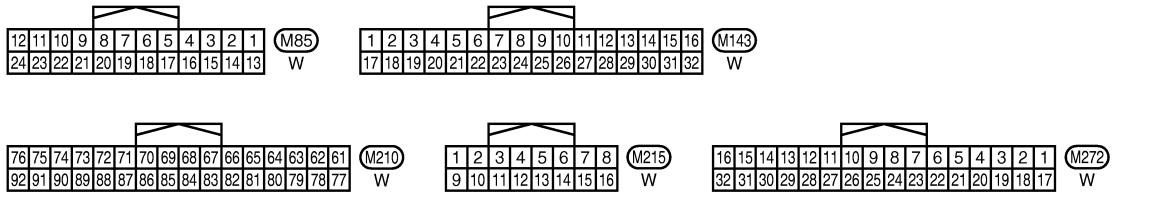

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6737E

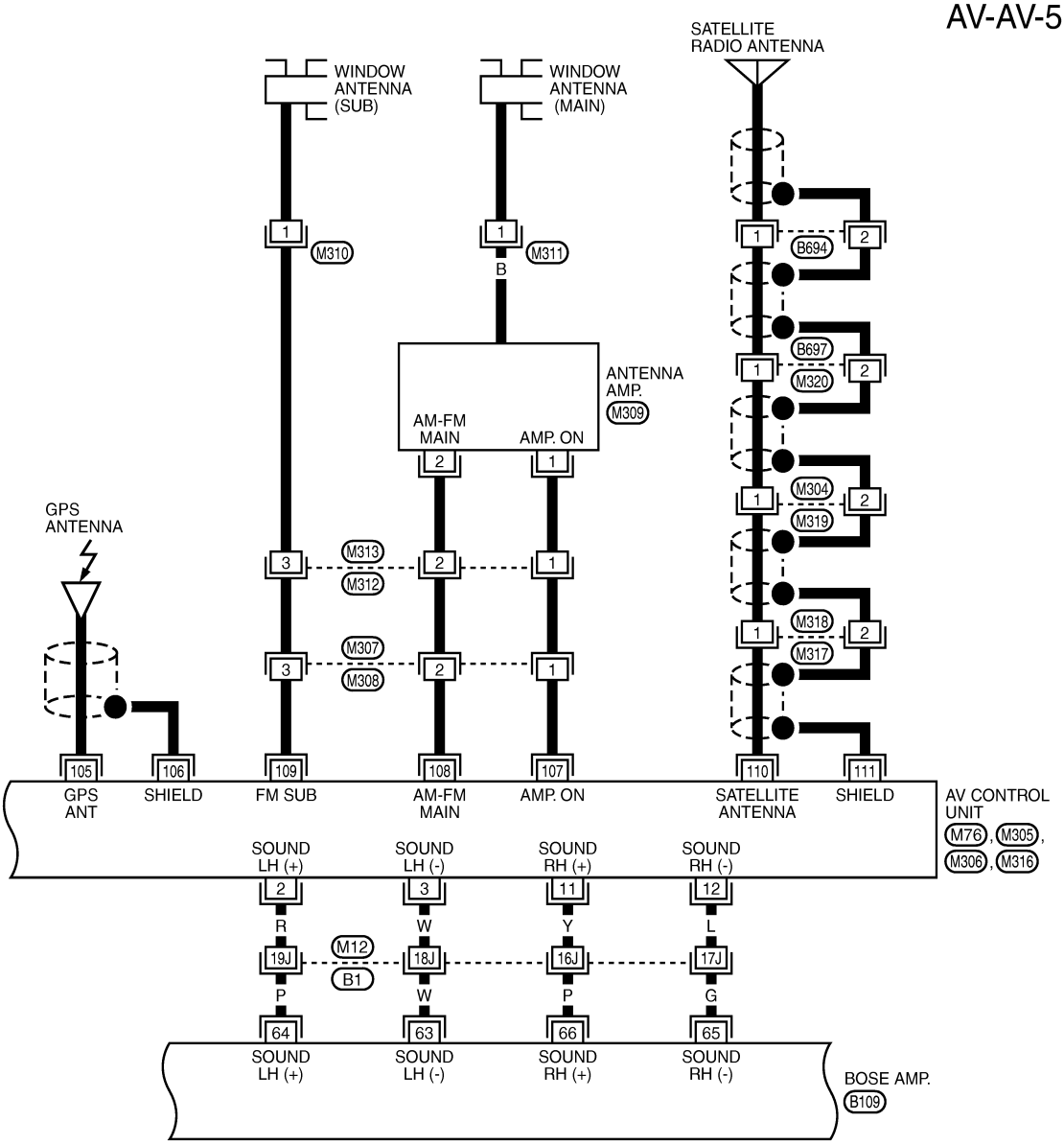
AV-AV-58

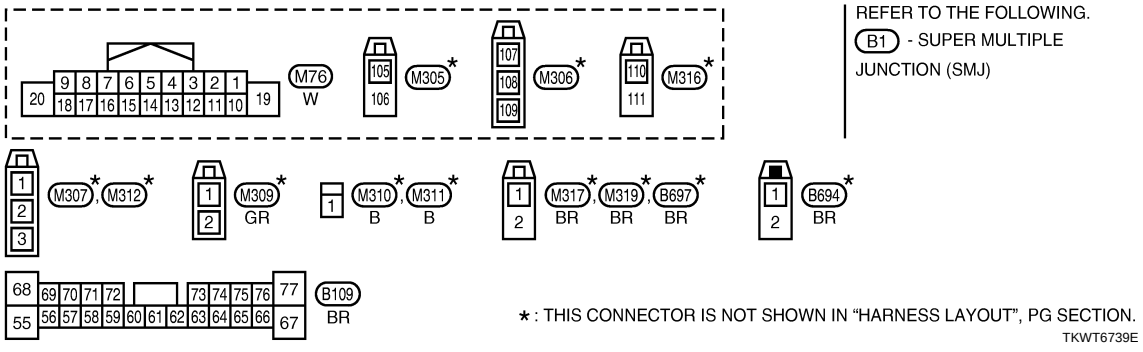




TKWT6738E

AV-AV-59



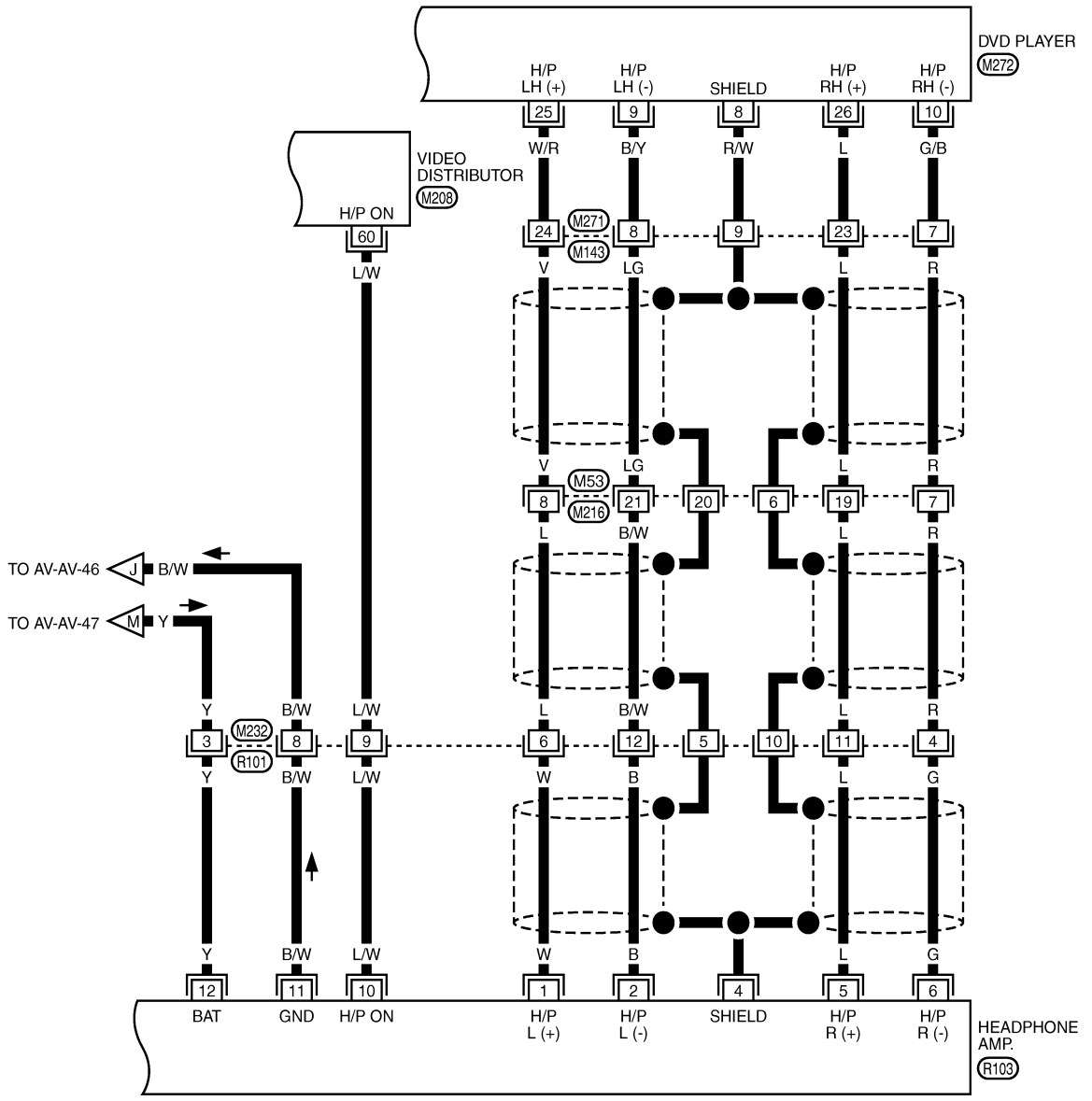


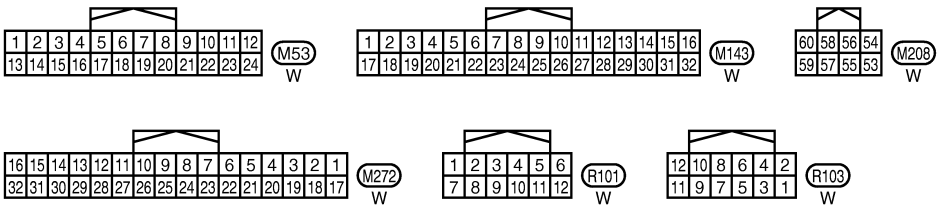
REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

* : THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT”, PG SECTION.

TKWT6739E

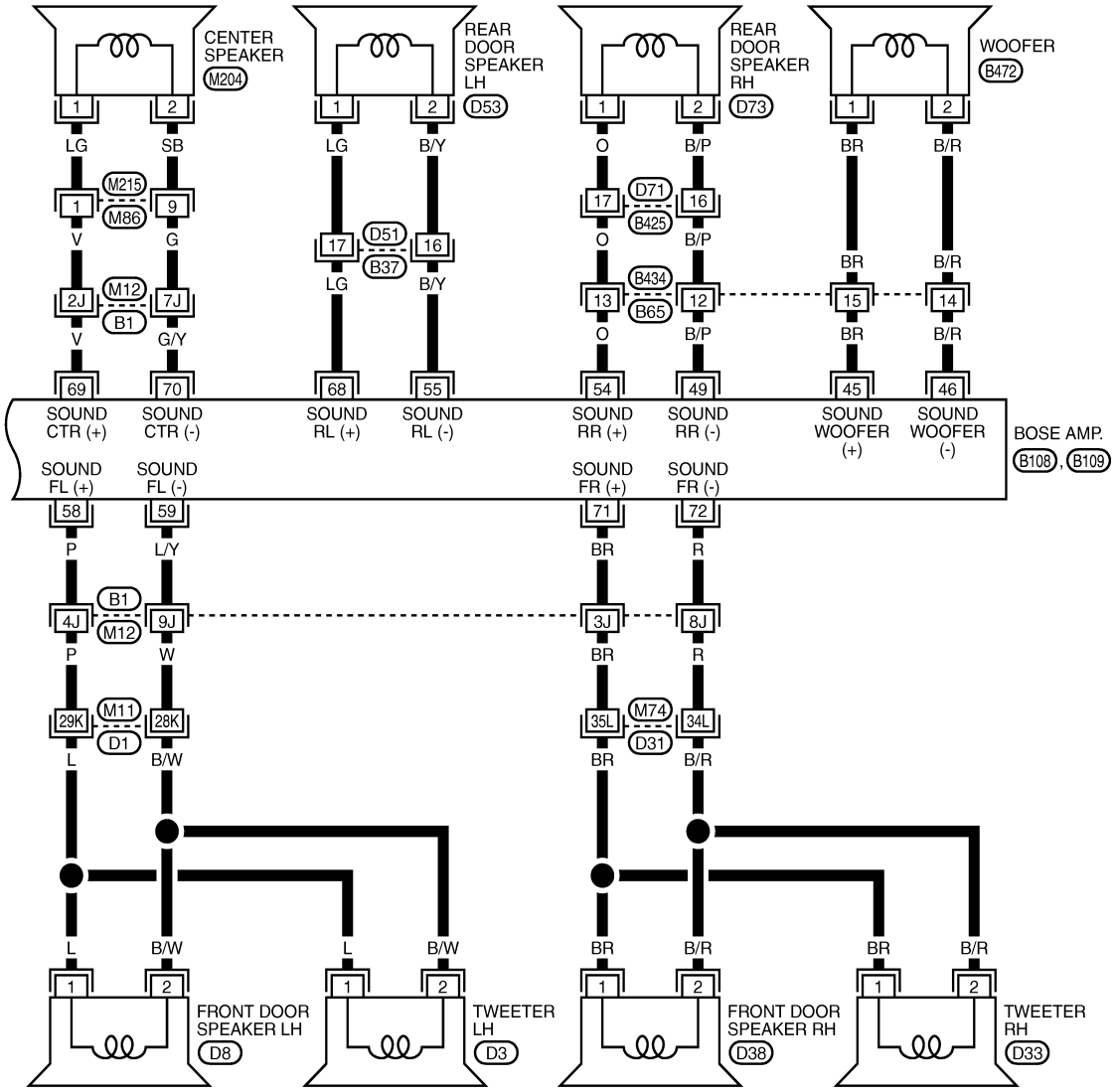
AV-AV-60

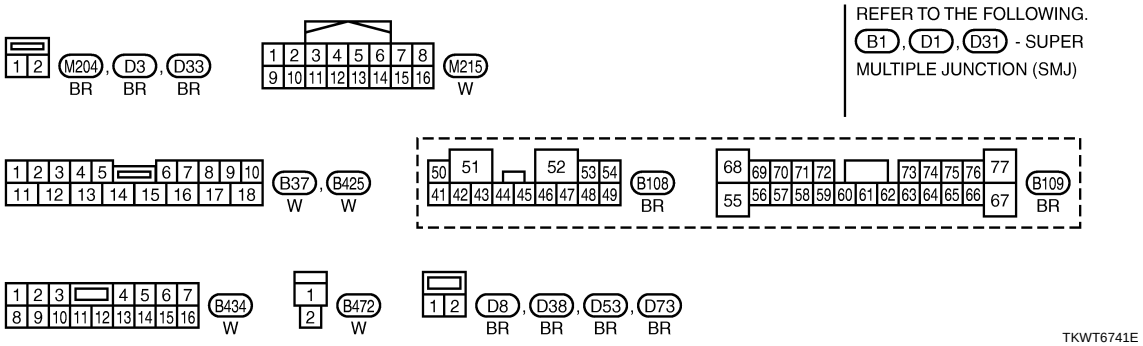




TKWT6740E

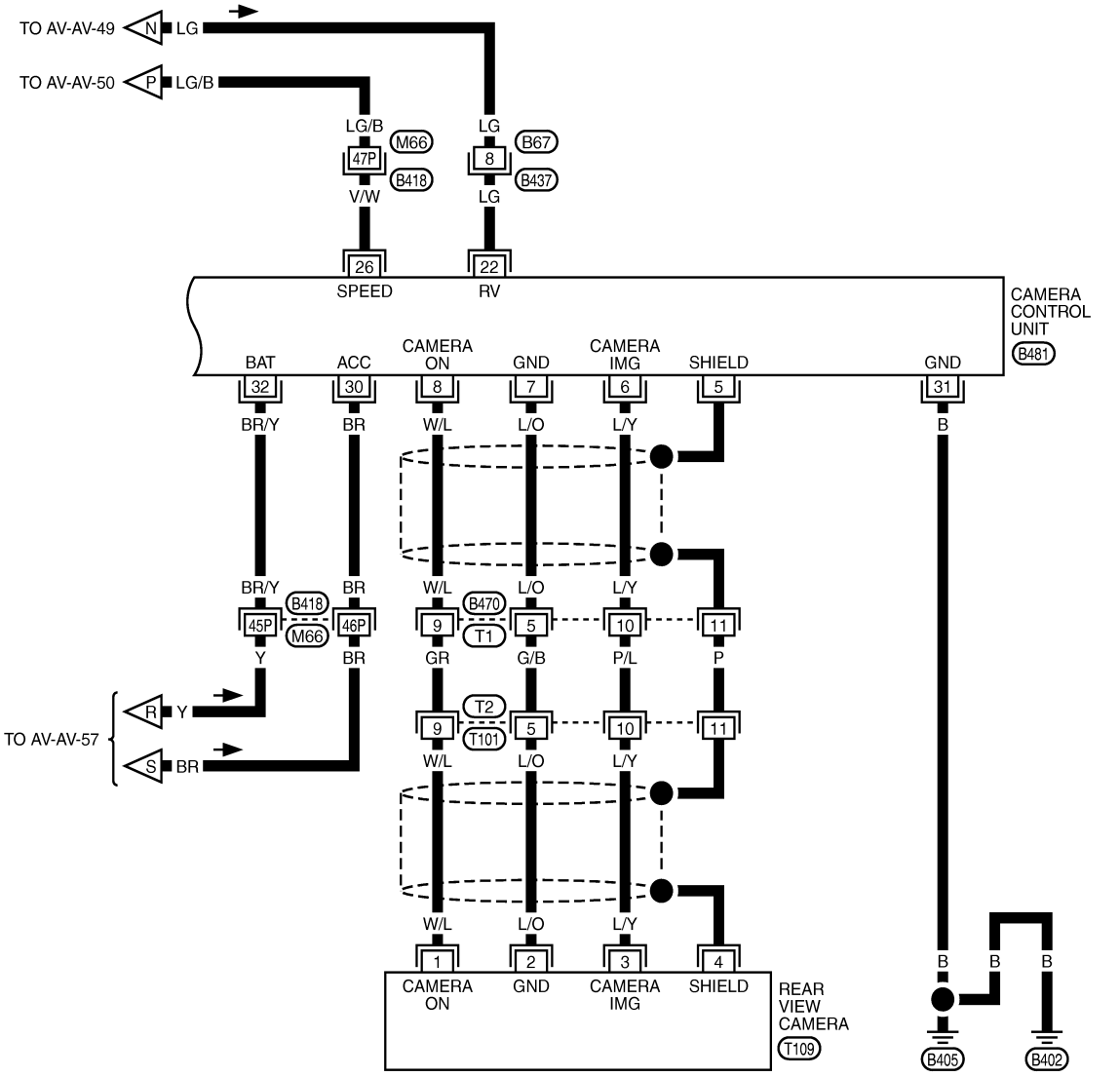
AV-AV-61

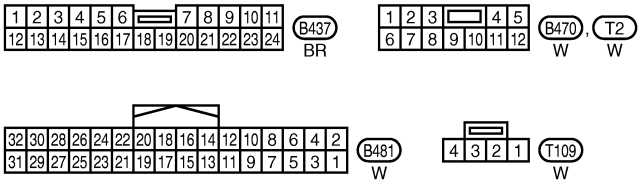




REFER TO THE FOLLOWING.
B1, D1, D31 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6741E



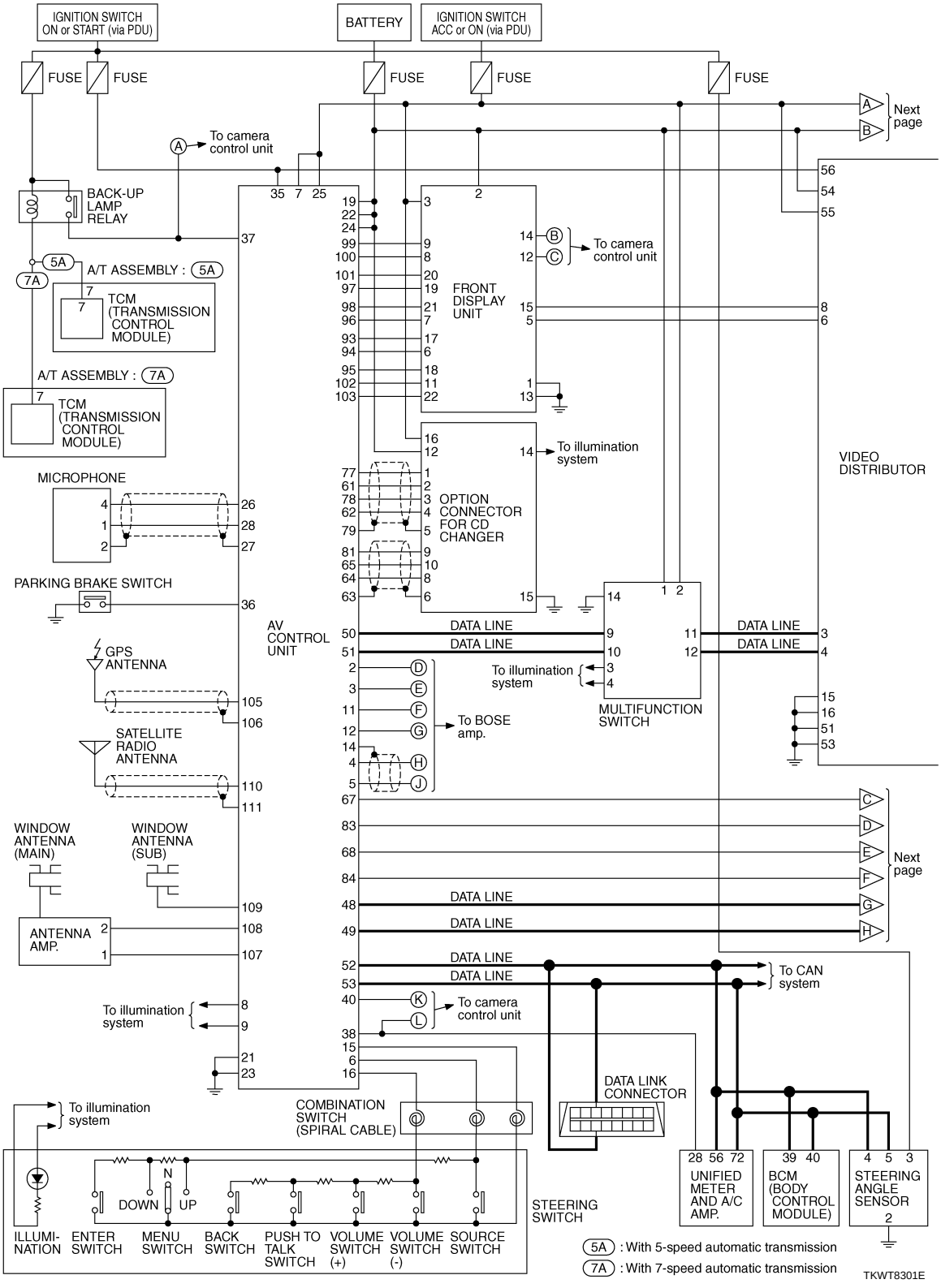


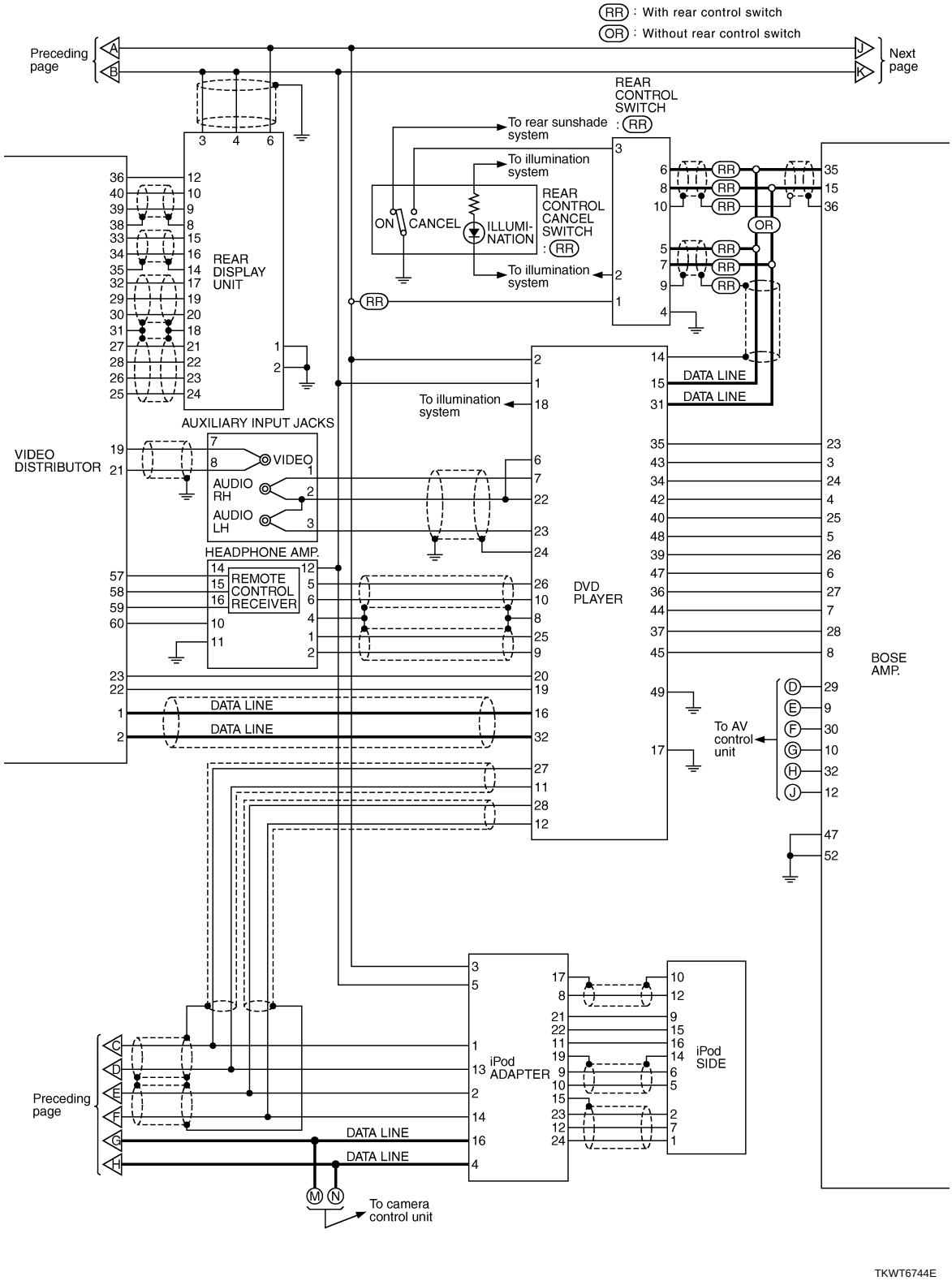
REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

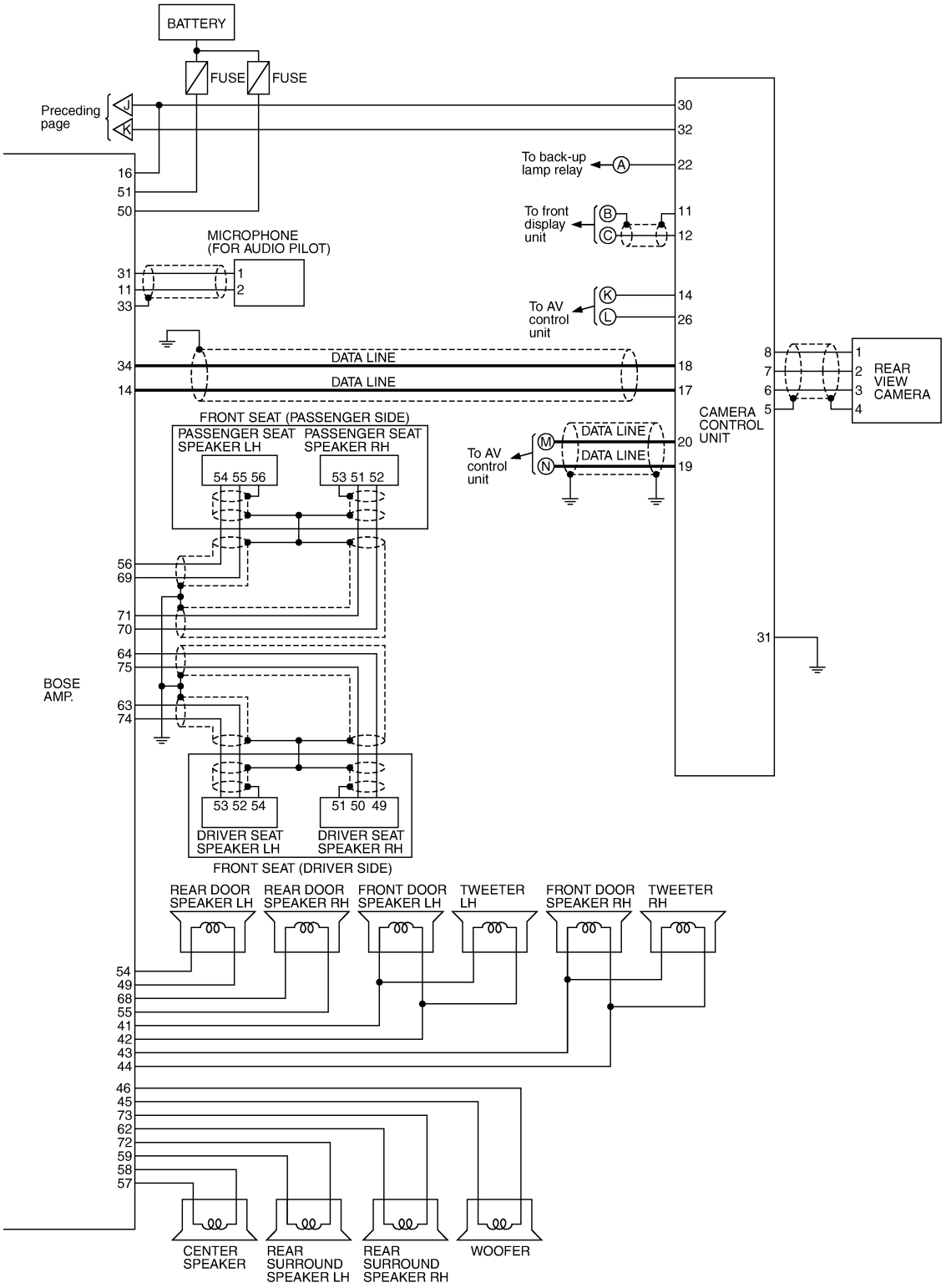
TKWT6742E

Schematic - BOSE 5.1ch Surround Audio System -

INFOID:0000000004391620




RR : With rear control switch
OR : Without rear control switch
Preceding page
Next page
REAR CONTROL SWITCH : RR
To rear sunshade system
To illumination system
REAR CONTROL CANCEL SWITCH : RR
ON
CANCEL
ILLUMI-NATION
REAR DISPLAY UNIT
AUXILIARY INPUT JACKS
VIDEO DISTRIBUTOR
VIDEO
AUDIO RH
AUDIO LH
HEADPHONE AMP.
REMOTE CONTROL RECEIVER
DVD PLAYER
DATA LINE
DATA LINE
DATA LINE
DATA LINE
To AV control unit
BOSE AMP.
iPod ADAPTER
iPod SIDE
To camera control unit
TKWT6744E



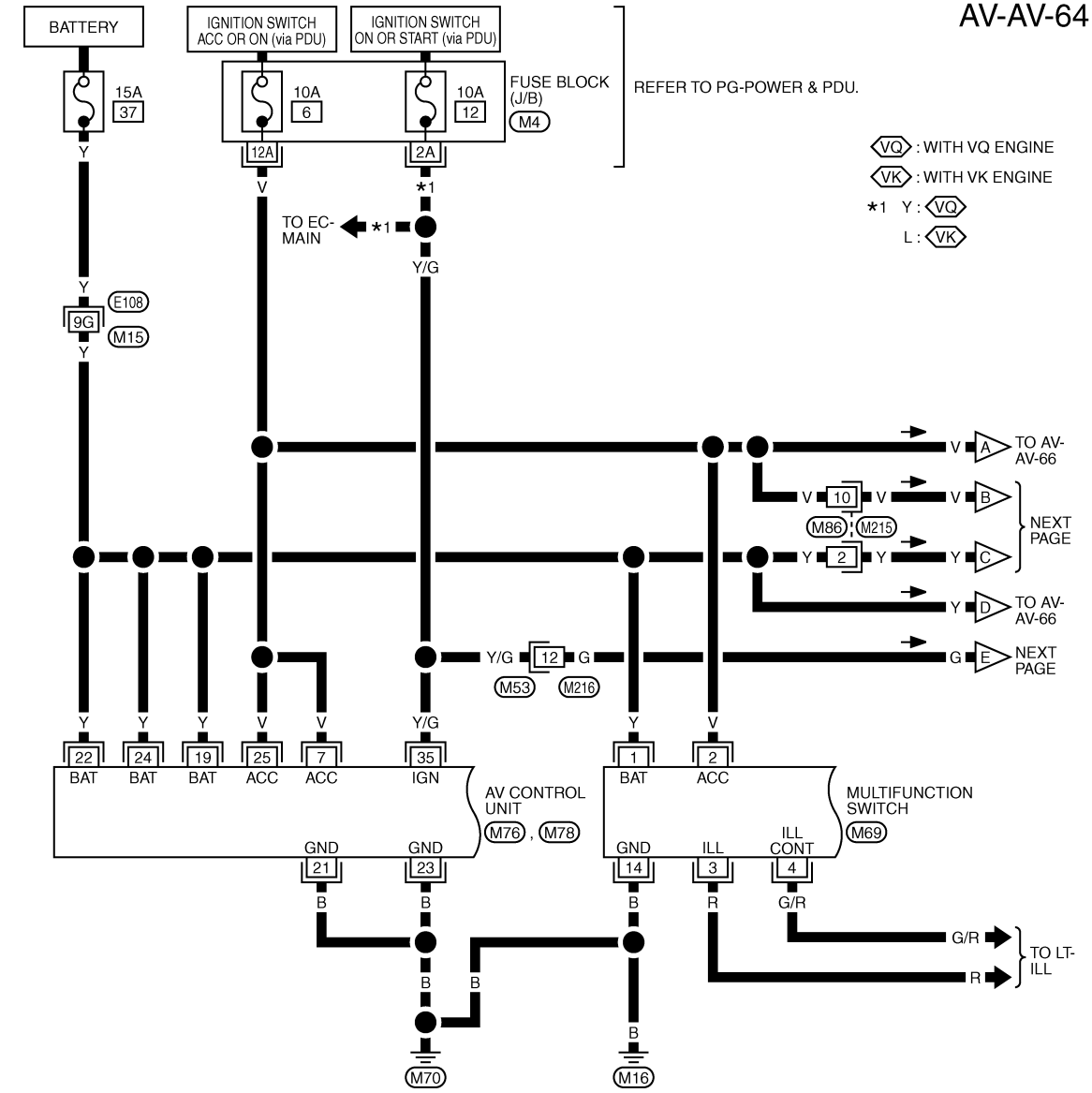
TKWT6745E

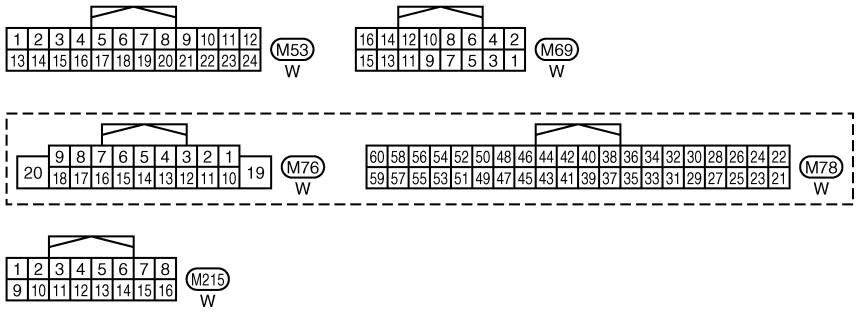
Wiring Diagram - AV - / BOSE Surround Audio 5.1ch System

INFOID:0000000004391621

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

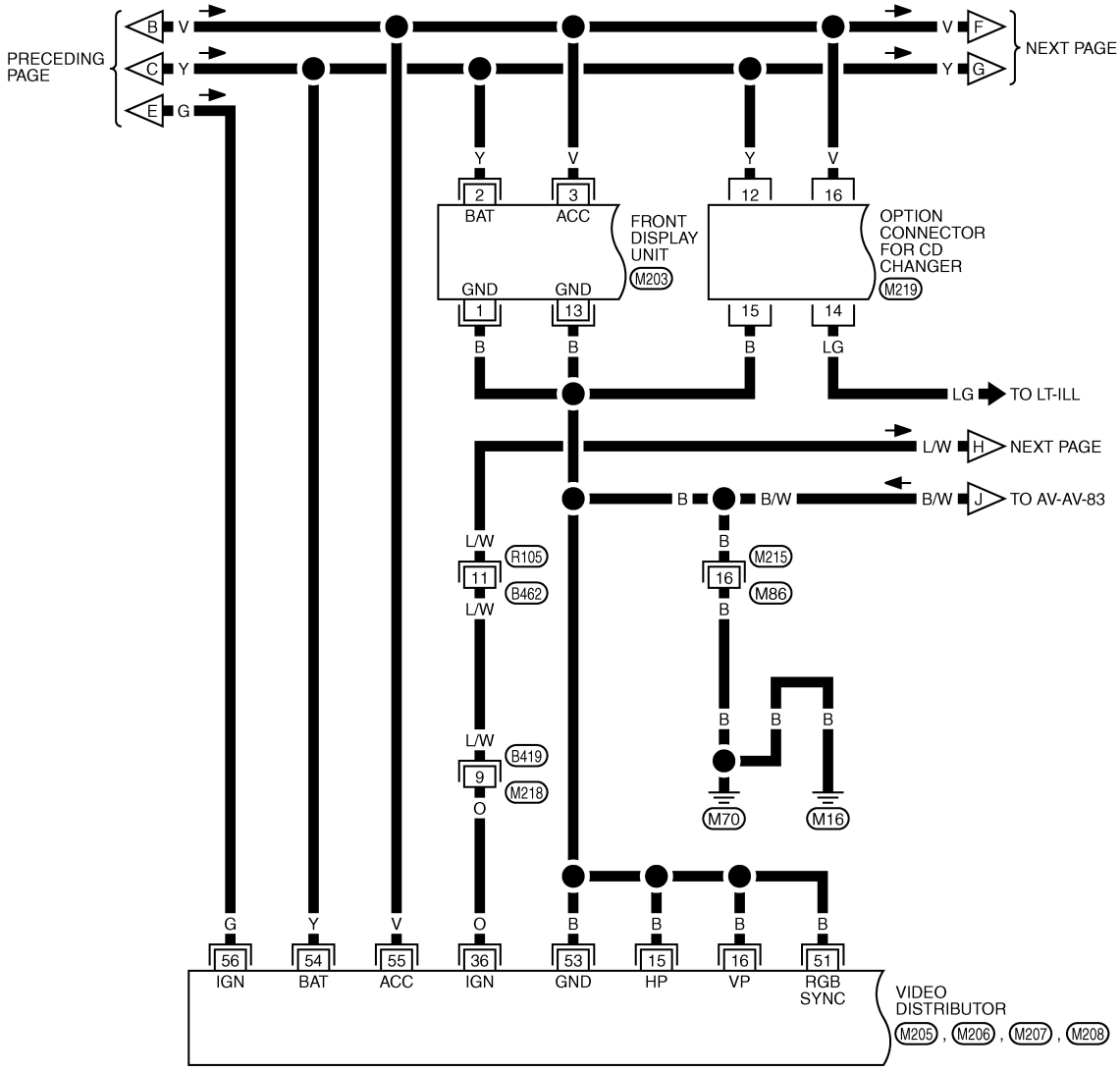


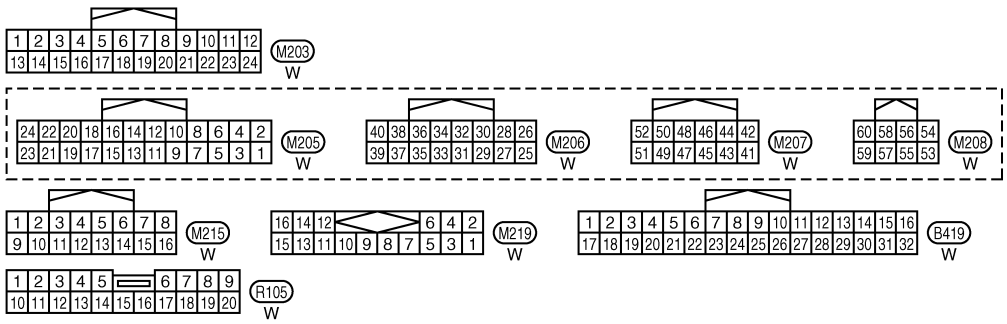


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8302E

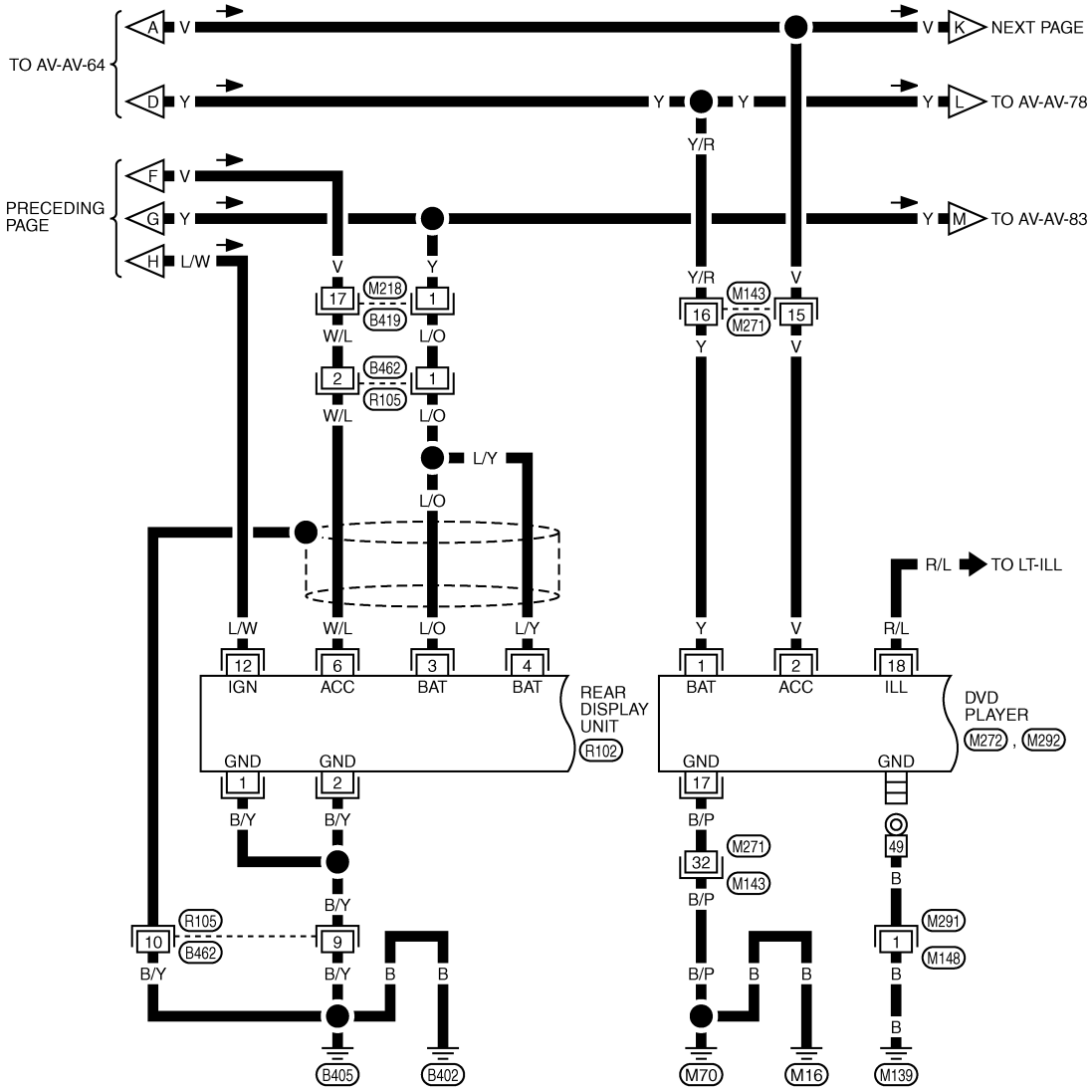
AV-AV-65

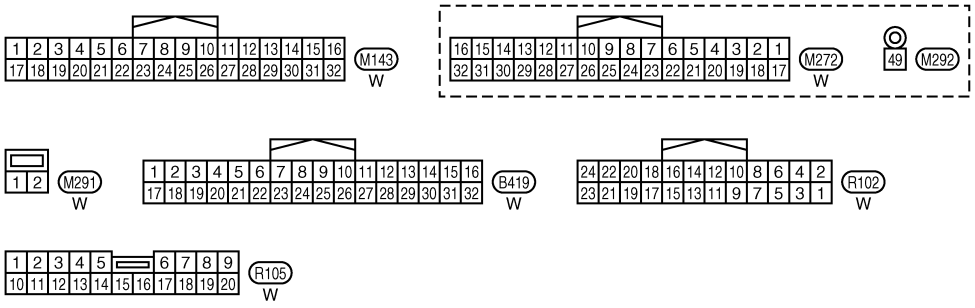




TKWT8303E

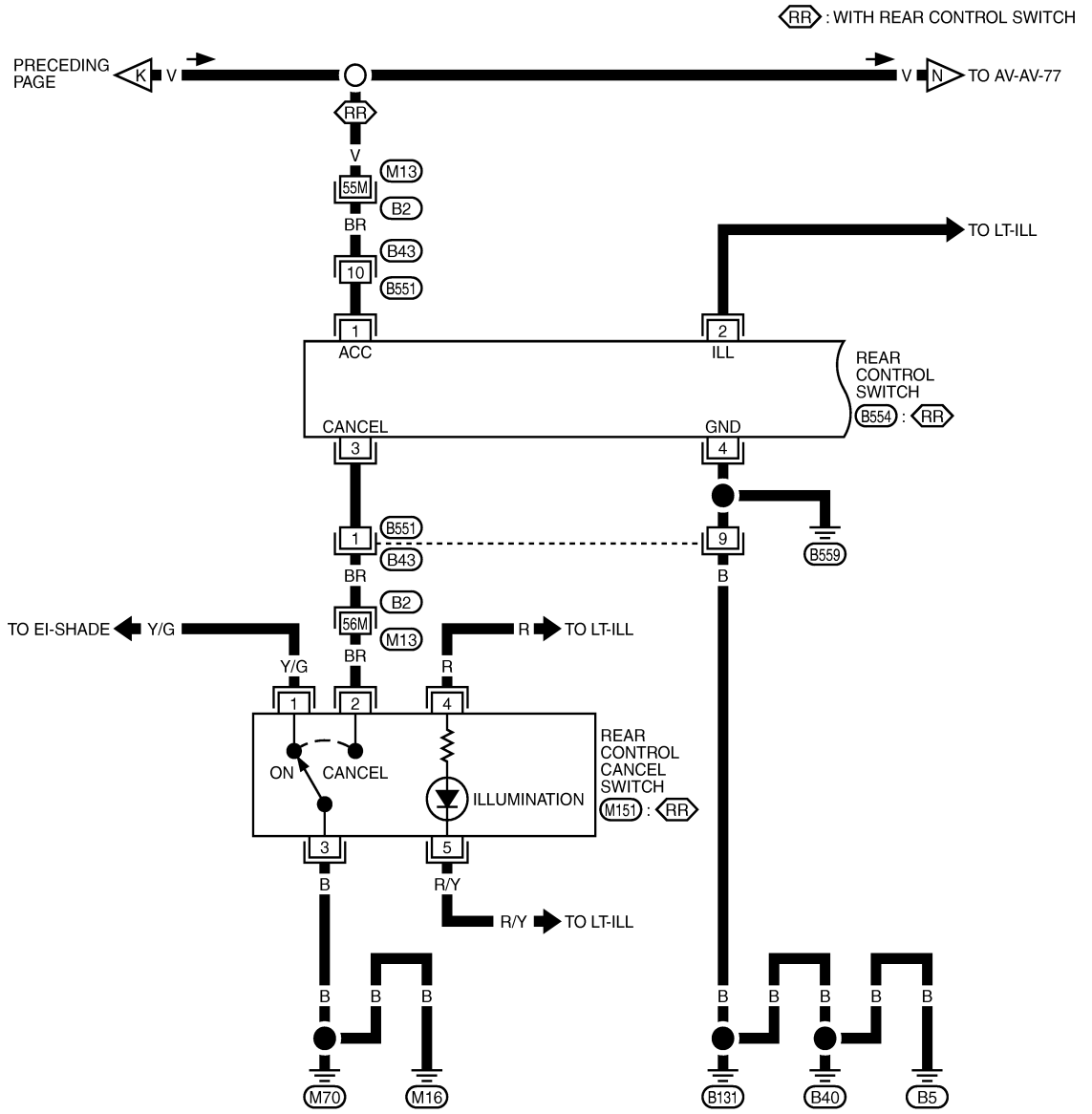
AV-AV-66

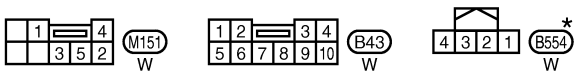




TKWT8304E

AV-AV-67



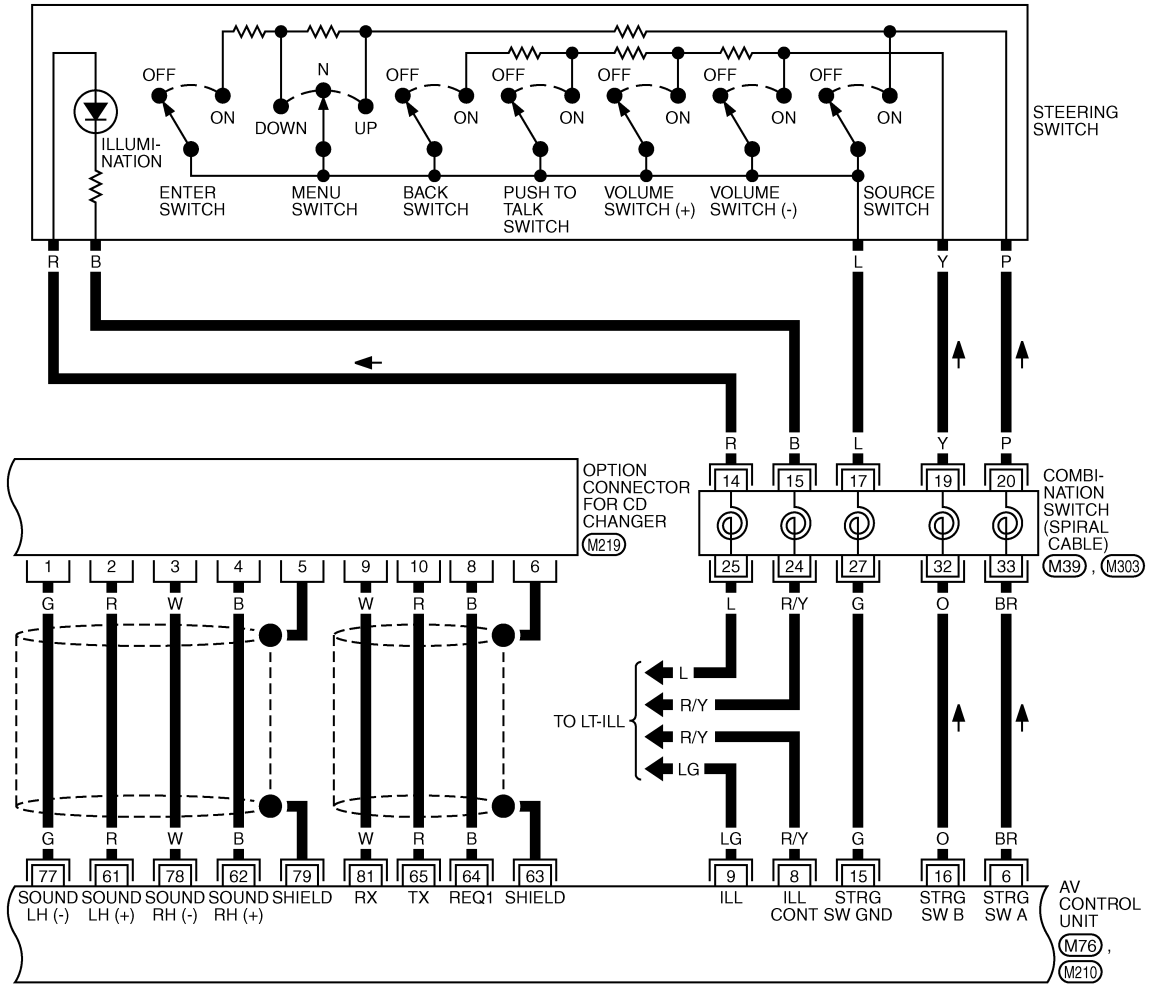


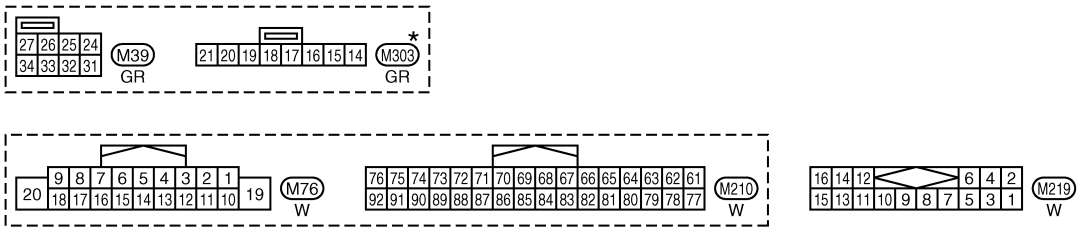
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6749E

AV-AV-68

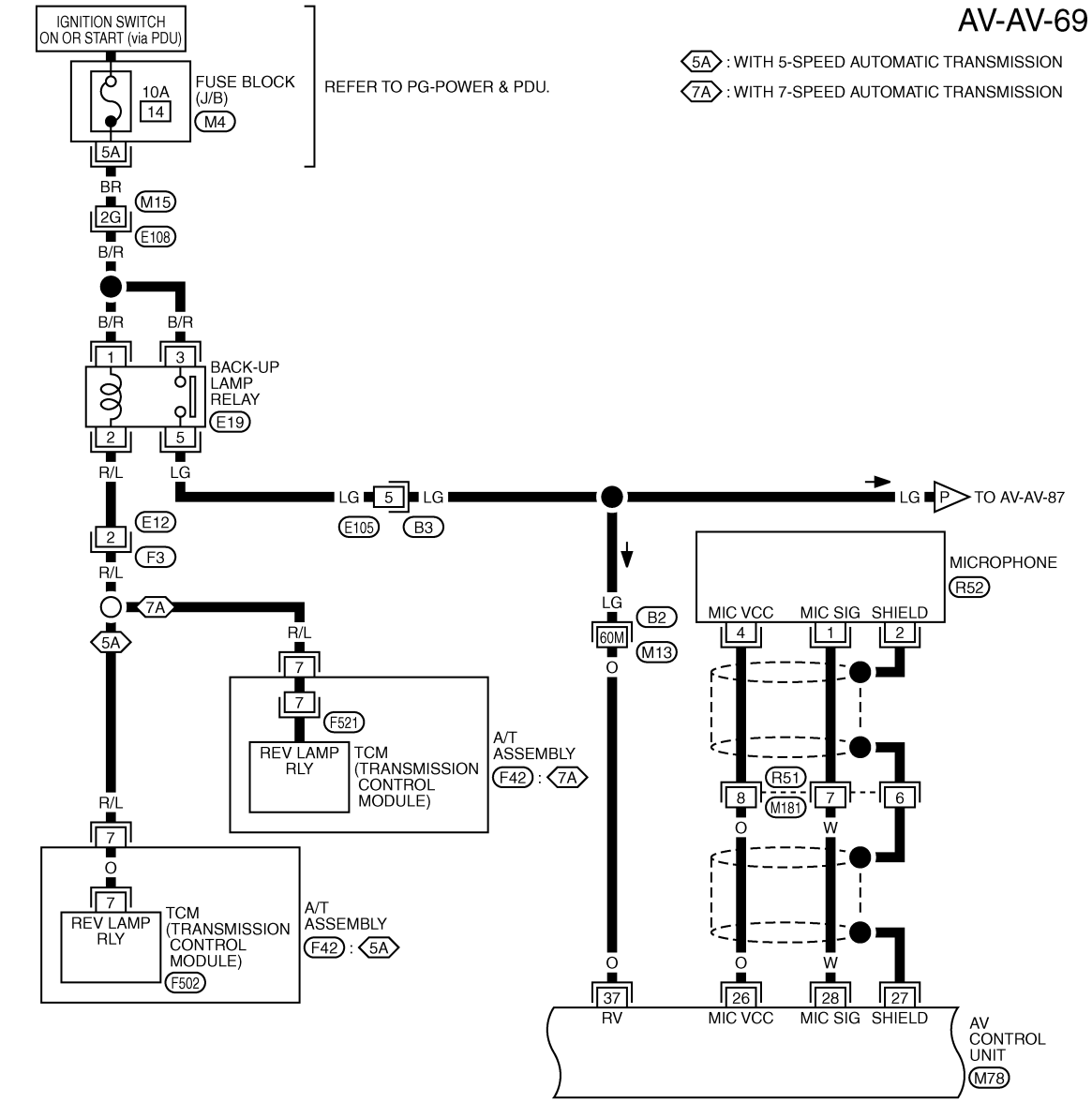


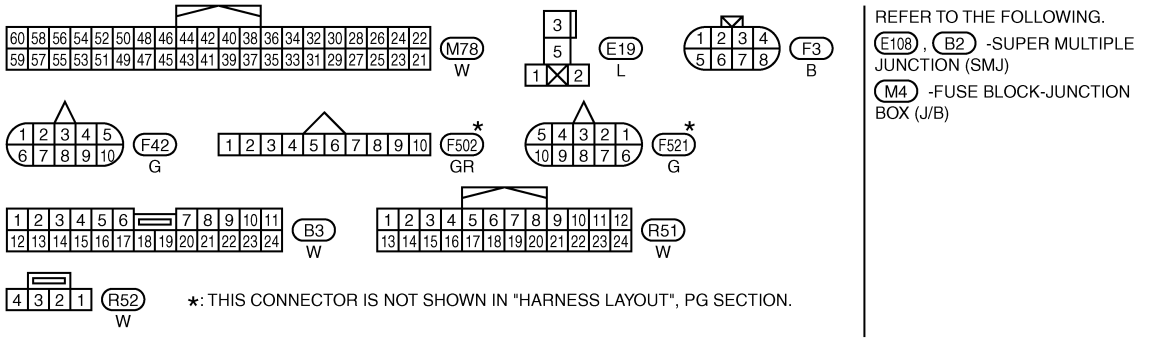


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT8305E

AV-AV-69

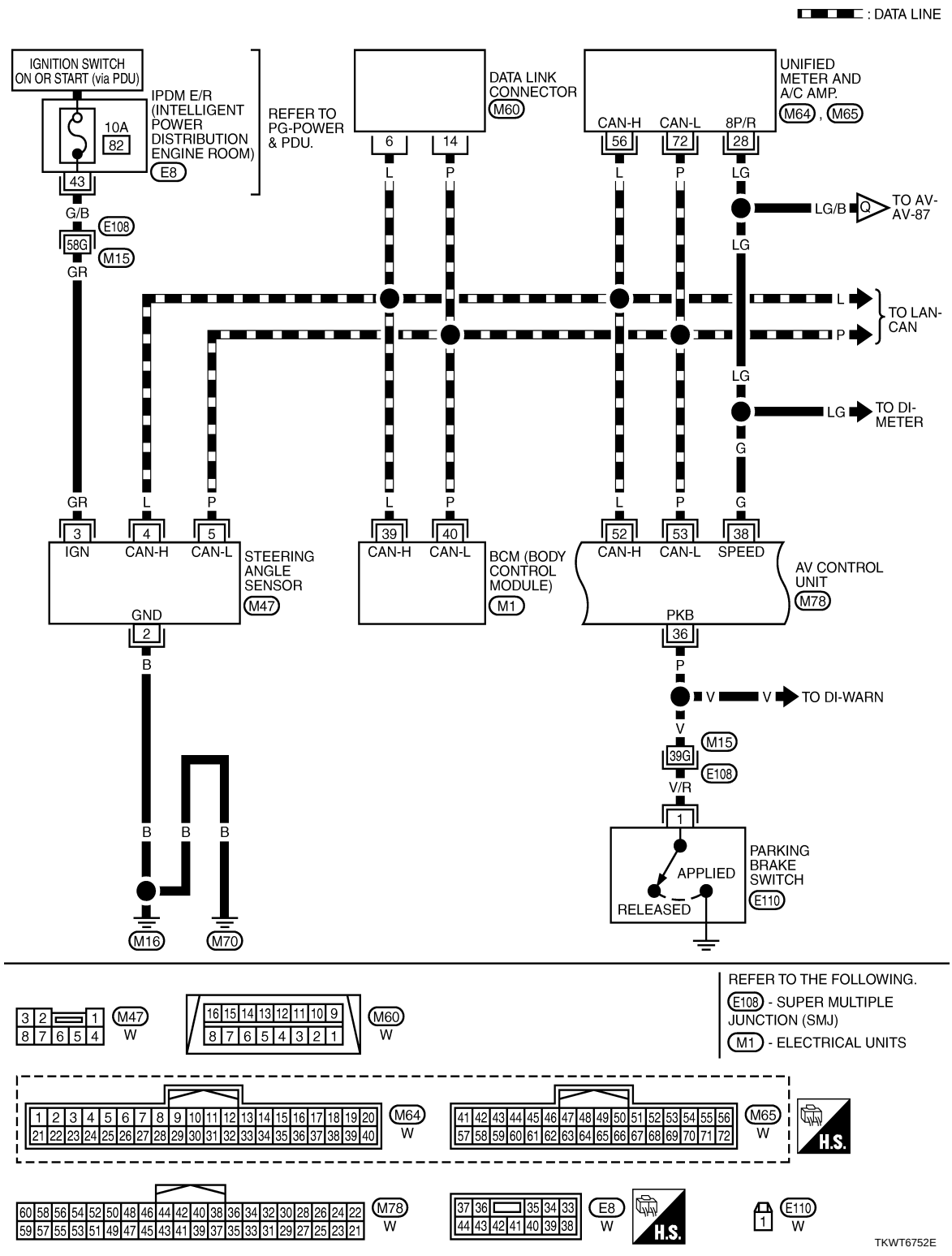




REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

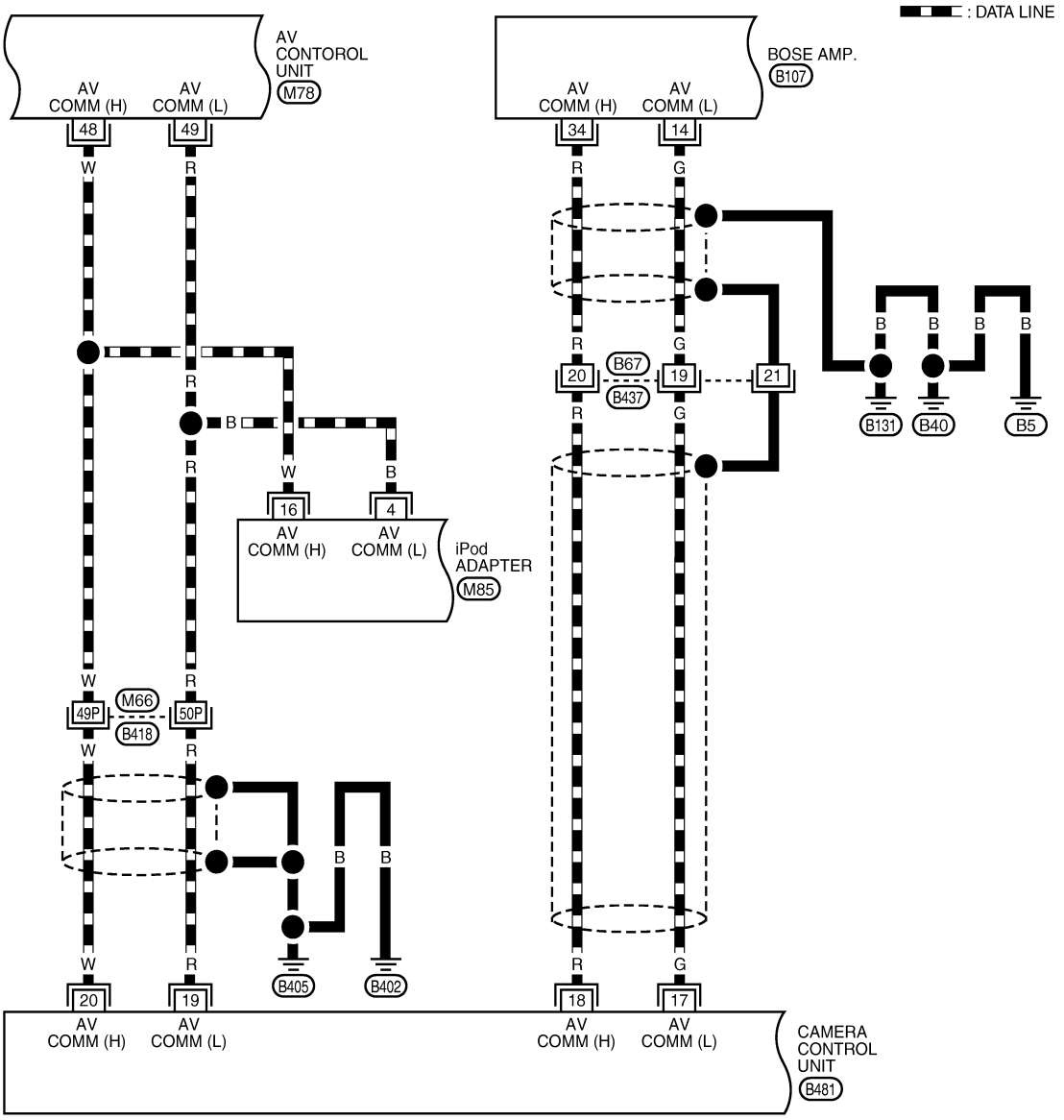
TKWT8306E

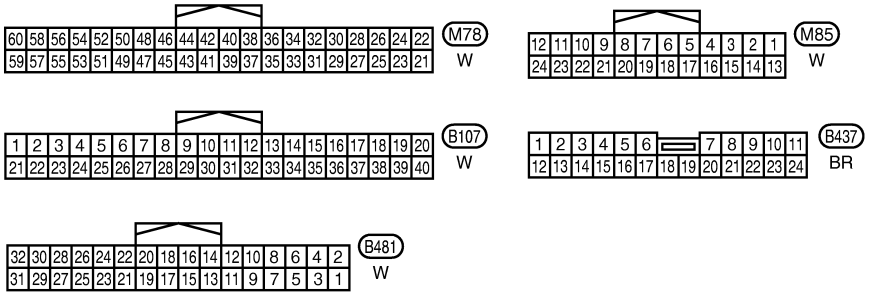
AV-AV-70



REFER TO THE FOLLOWING.
E108 - SUPER MULTIPLE JUNCTION (SMJ)
M1 - ELECTRICAL UNITS

AV-AV-71

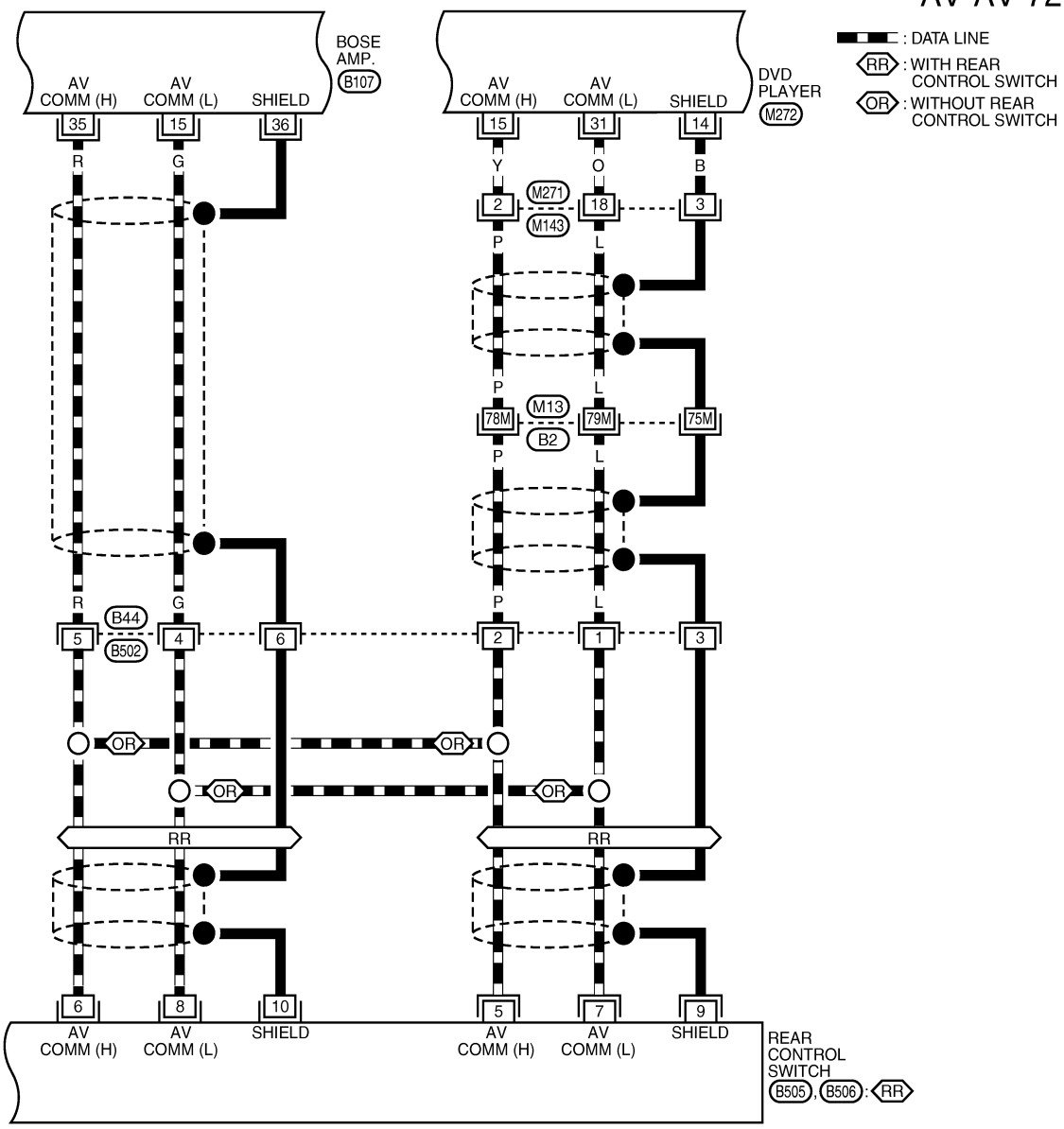


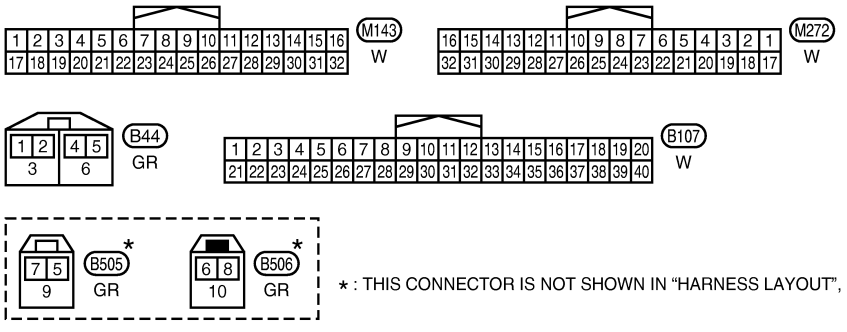


REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6753E

AV-AV-72

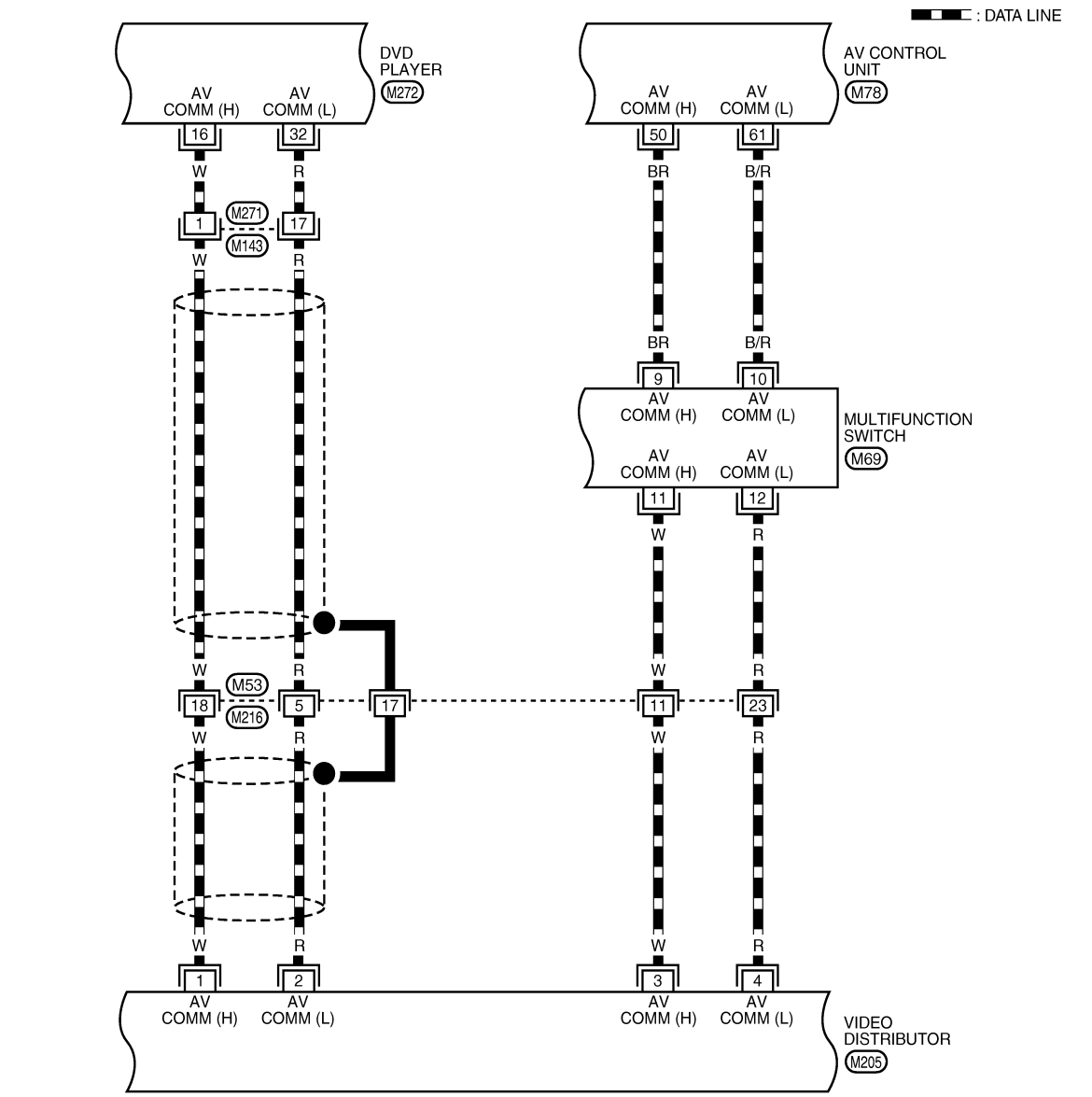


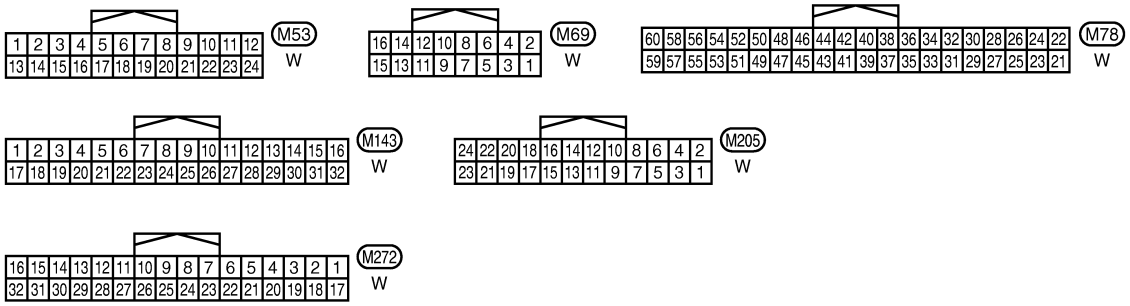


REFER TO THE FOLLOWING.
B2 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6754E

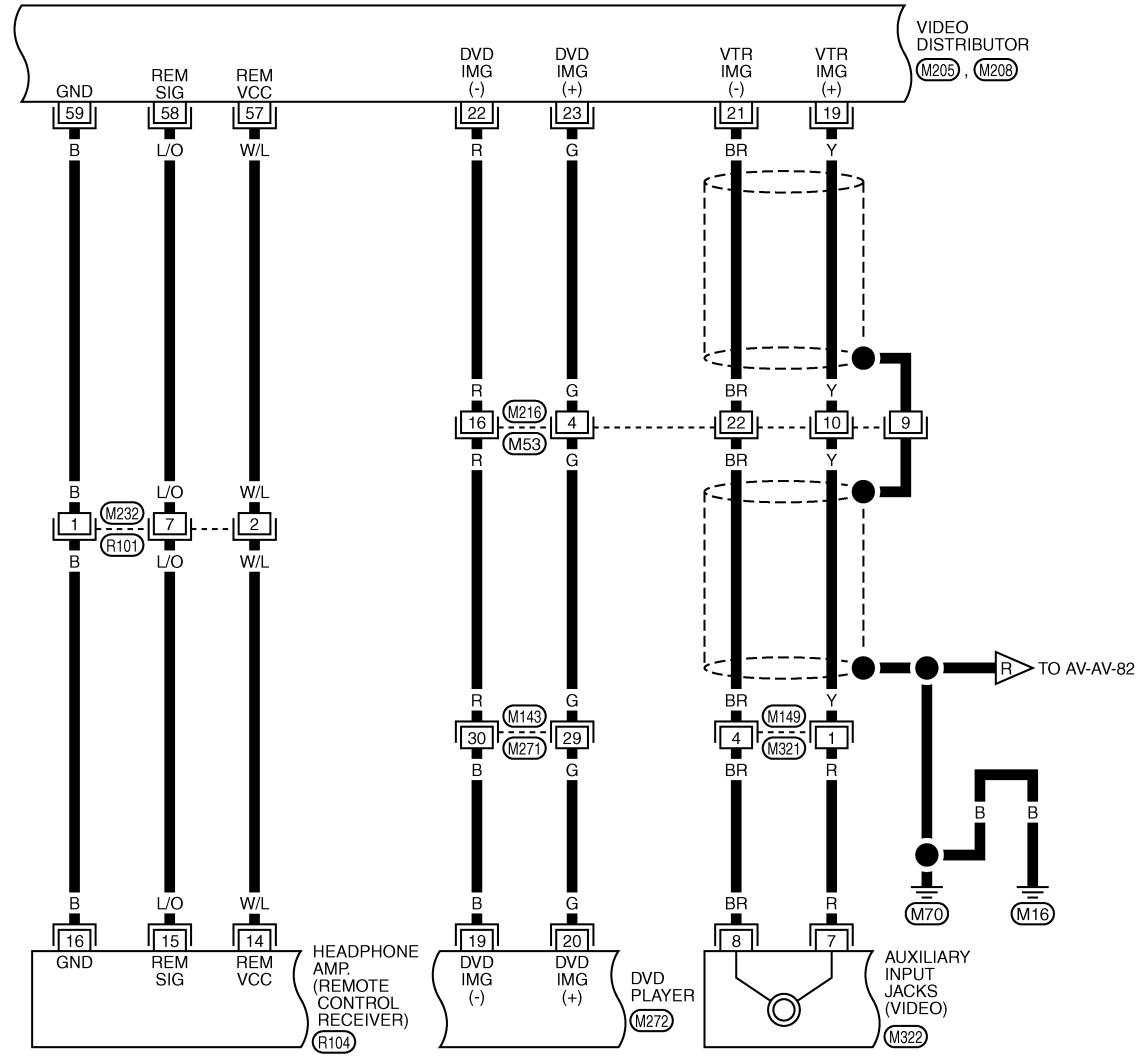
AV-AV-73





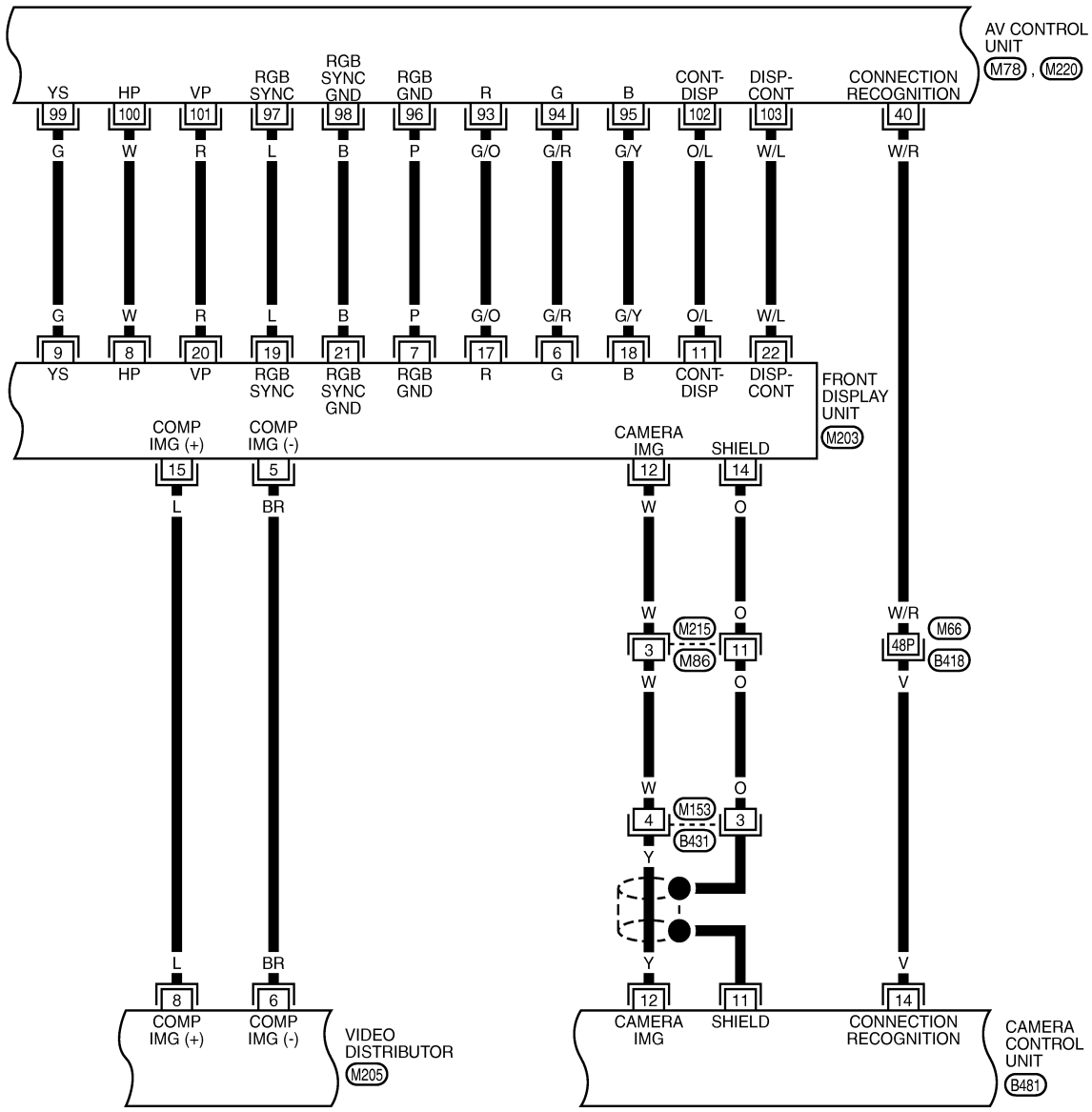
TKWT6755E

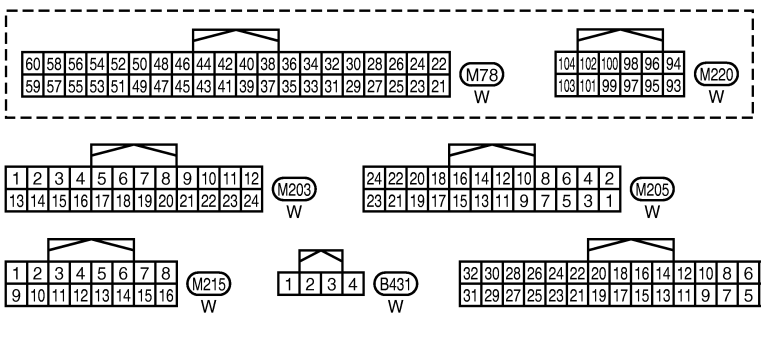
AV-AV-74



TKWT8307E

AV-AV-75

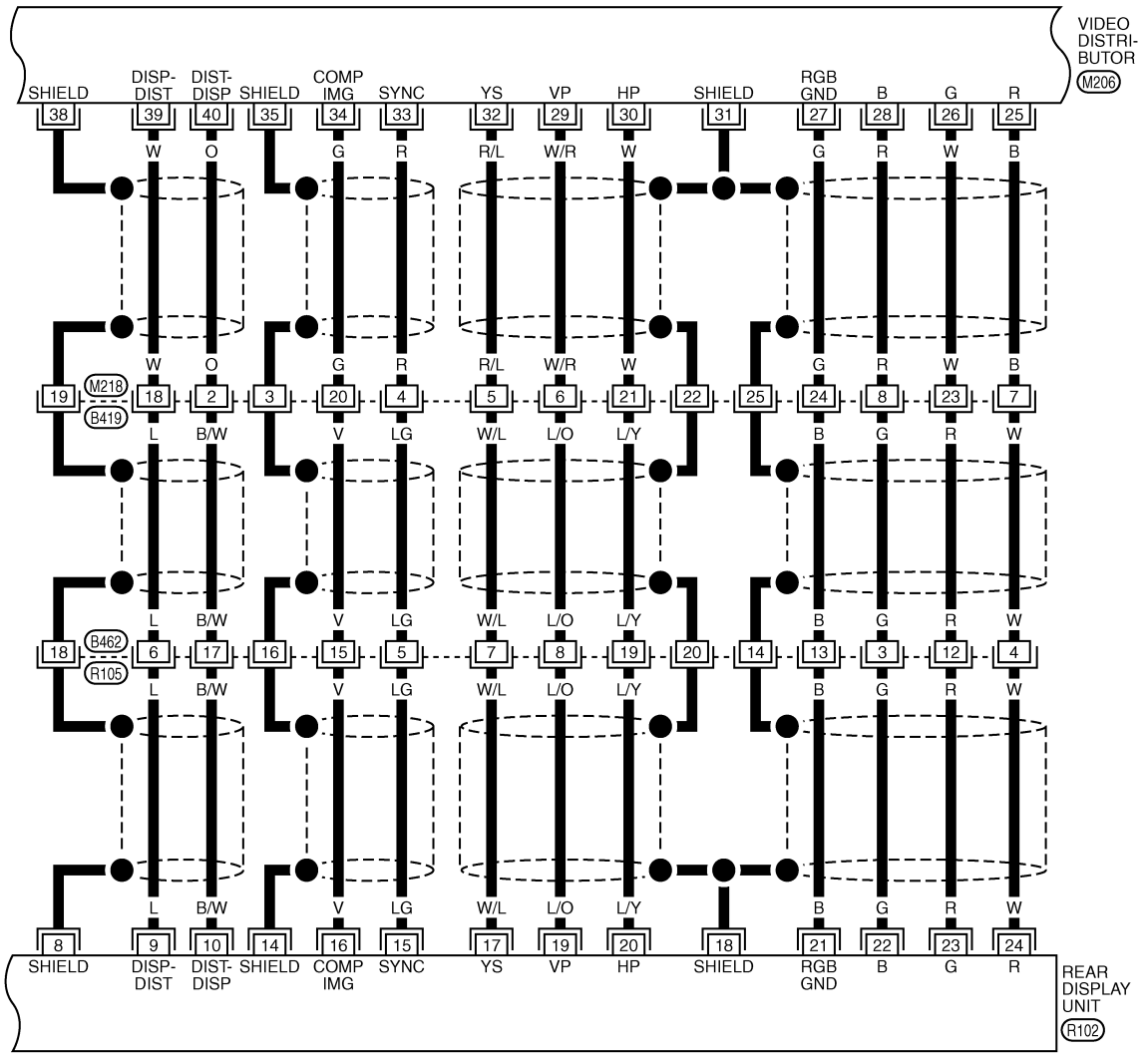


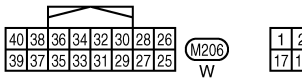


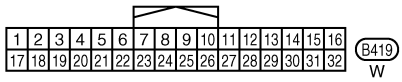
REFER TO THE FOLLOWING.
B418 -SUPER MULTIPLE JUNCTION (SMJ)

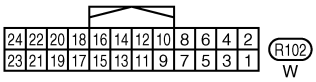
TKWT6757E

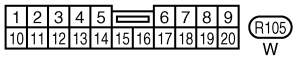
AV-AV-76





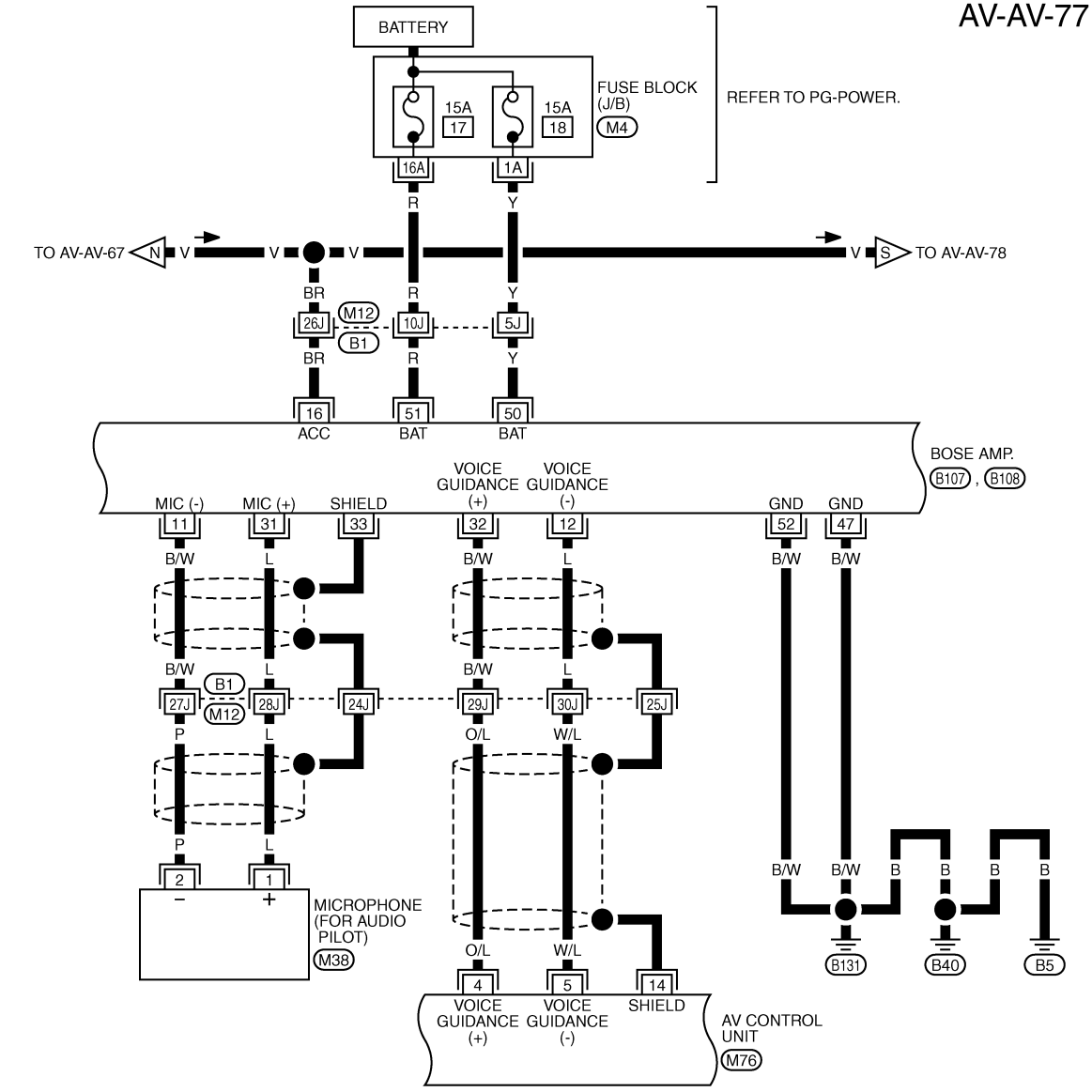


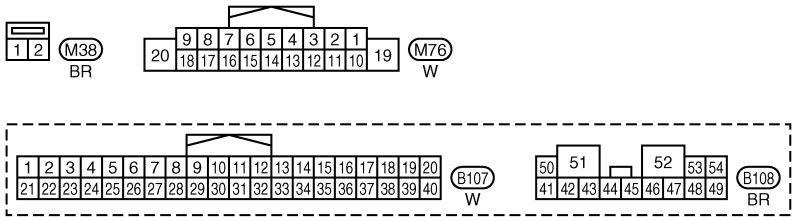




TKWT5152E

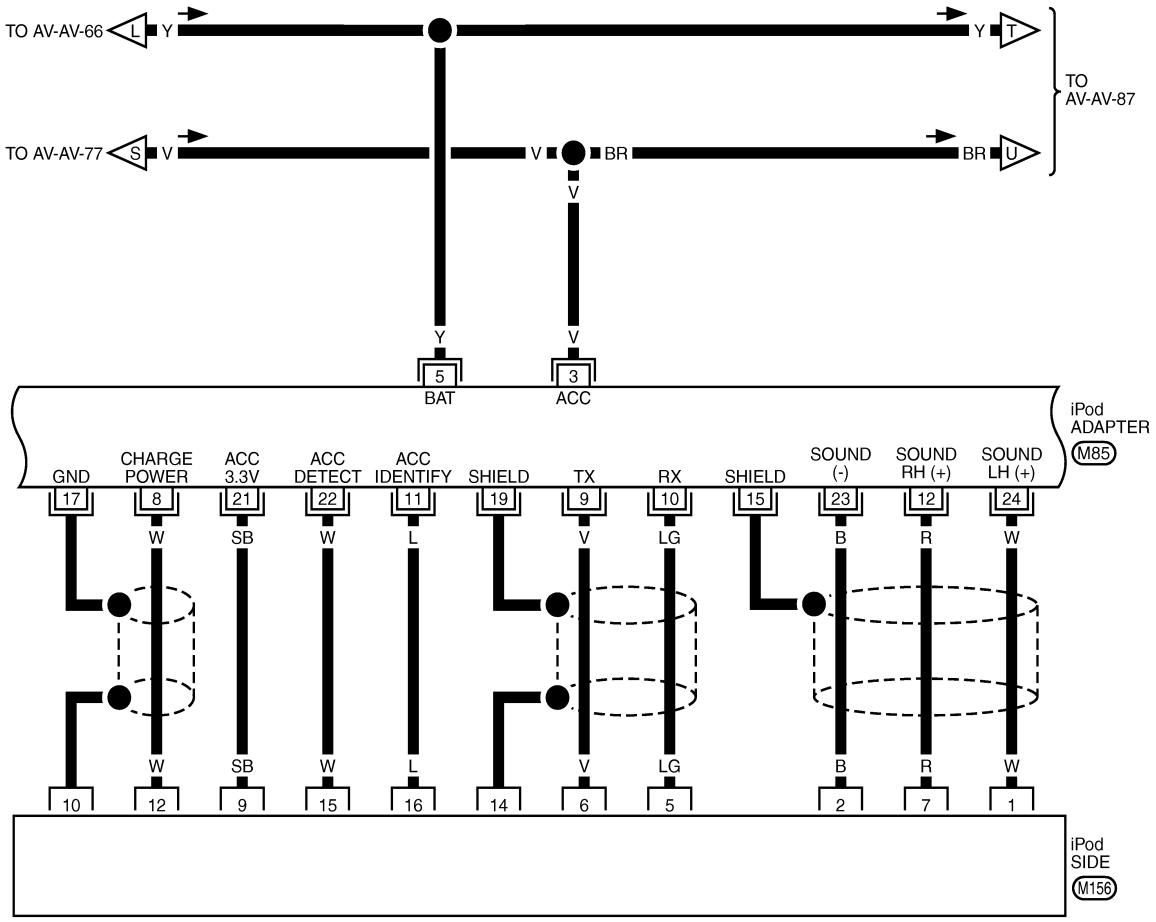
AV-AV-77

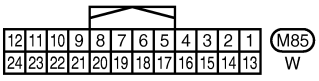


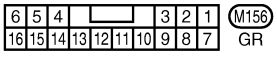


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT8308E

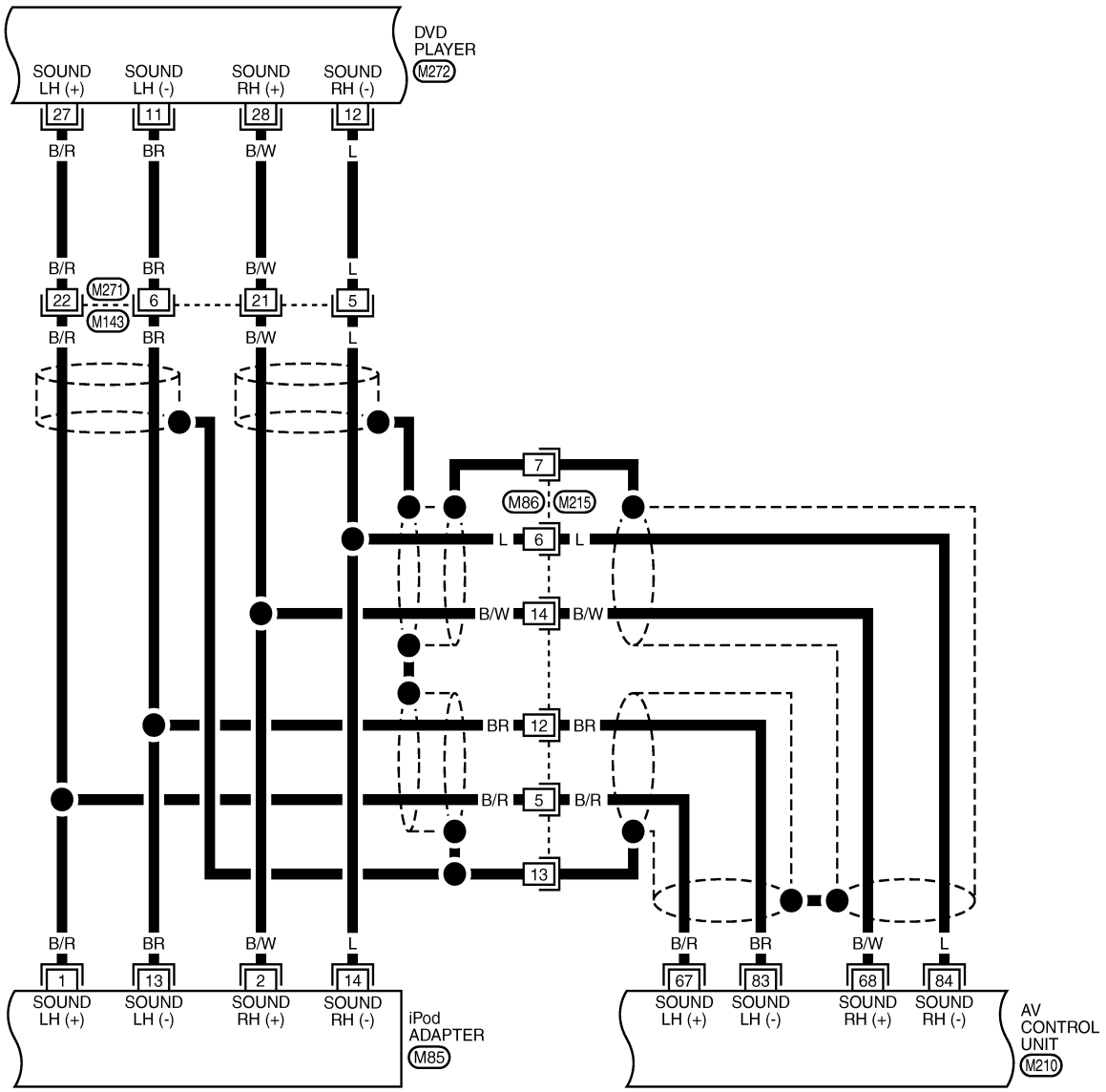

TO AV-AV-66
L
Y
Y
T
TO AV-AV-87
TO AV-AV-77
S
V
V
BR
BR
U
V
Y
V
5
BAT
3
ACC
iPod ADAPTER
M85
GND
CHARGE POWER
ACC 3.3V
ACC DETECT
ACC IDENTIFY
SHIELD
TX
RX
SHIELD
SOUND (-)
SOUND RH (+)
SOUND LH (+)
17
8
21
22
11
19
9
10
15
23
12
24
W
SB
W
L
V
LG
B
R
W
W
SB
W
L
V
LG
B
R
W
10
12
9
15
16
14
6
5
2
7
1
iPod SIDE
M156

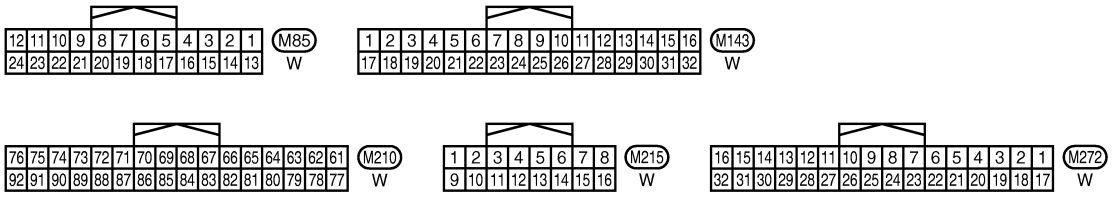

12 11 10 9 8 7 6 5 4 3 2 1
24 23 22 21 20 19 18 17 16 15 14 13
M85
W


6 5 4 3 2 1
16 15 14 13 12 11 10 9 8 7
M156
GR

TKWT6761E

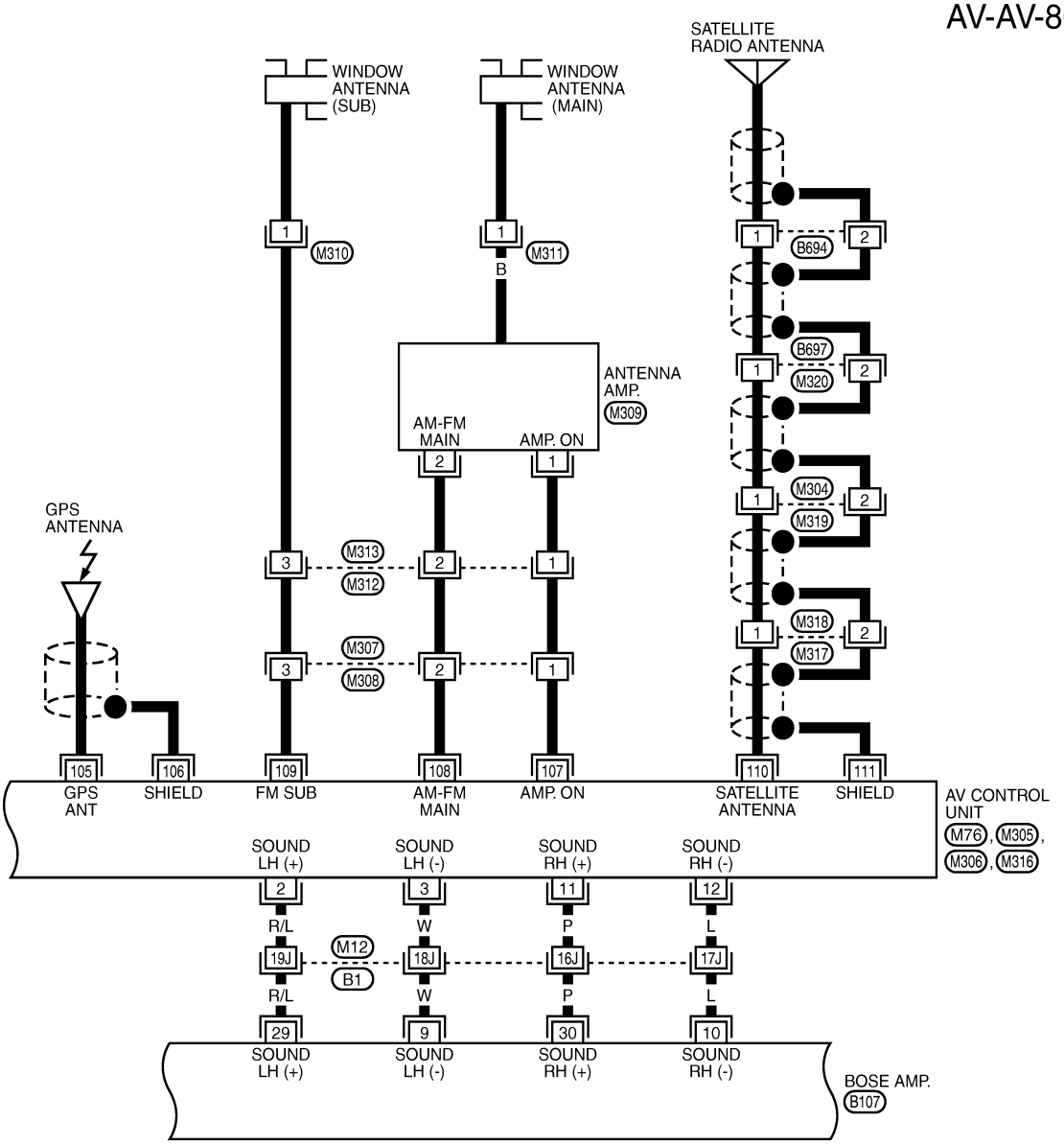
AV-AV-79

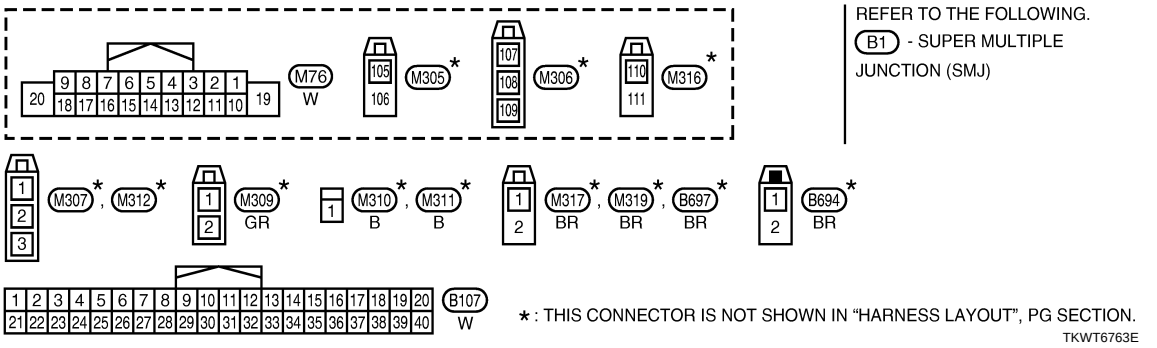




TKWT6762E

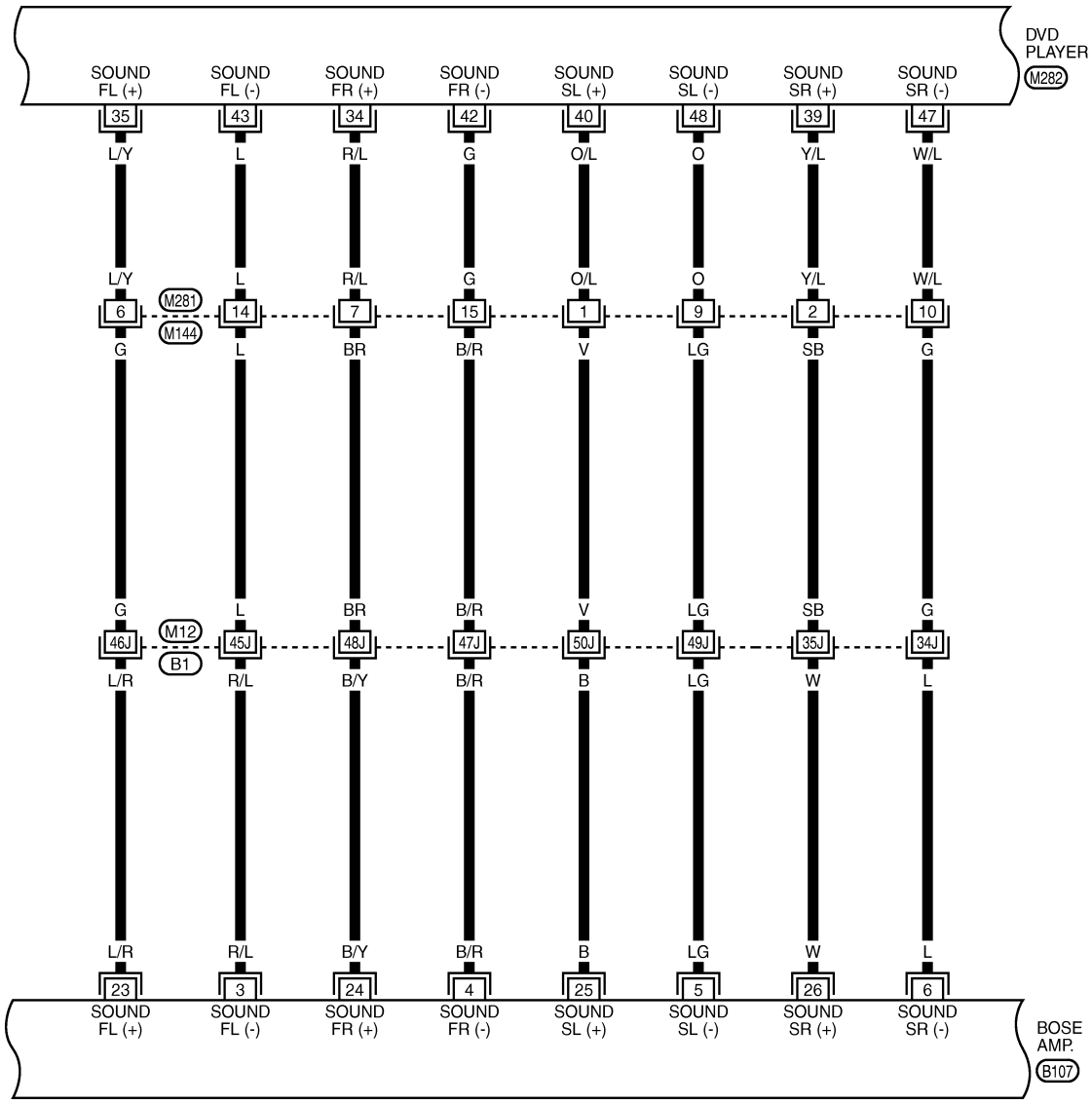
AV-AV-80

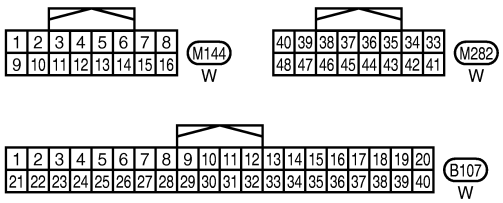




TKWT6763E

AV-AV-81

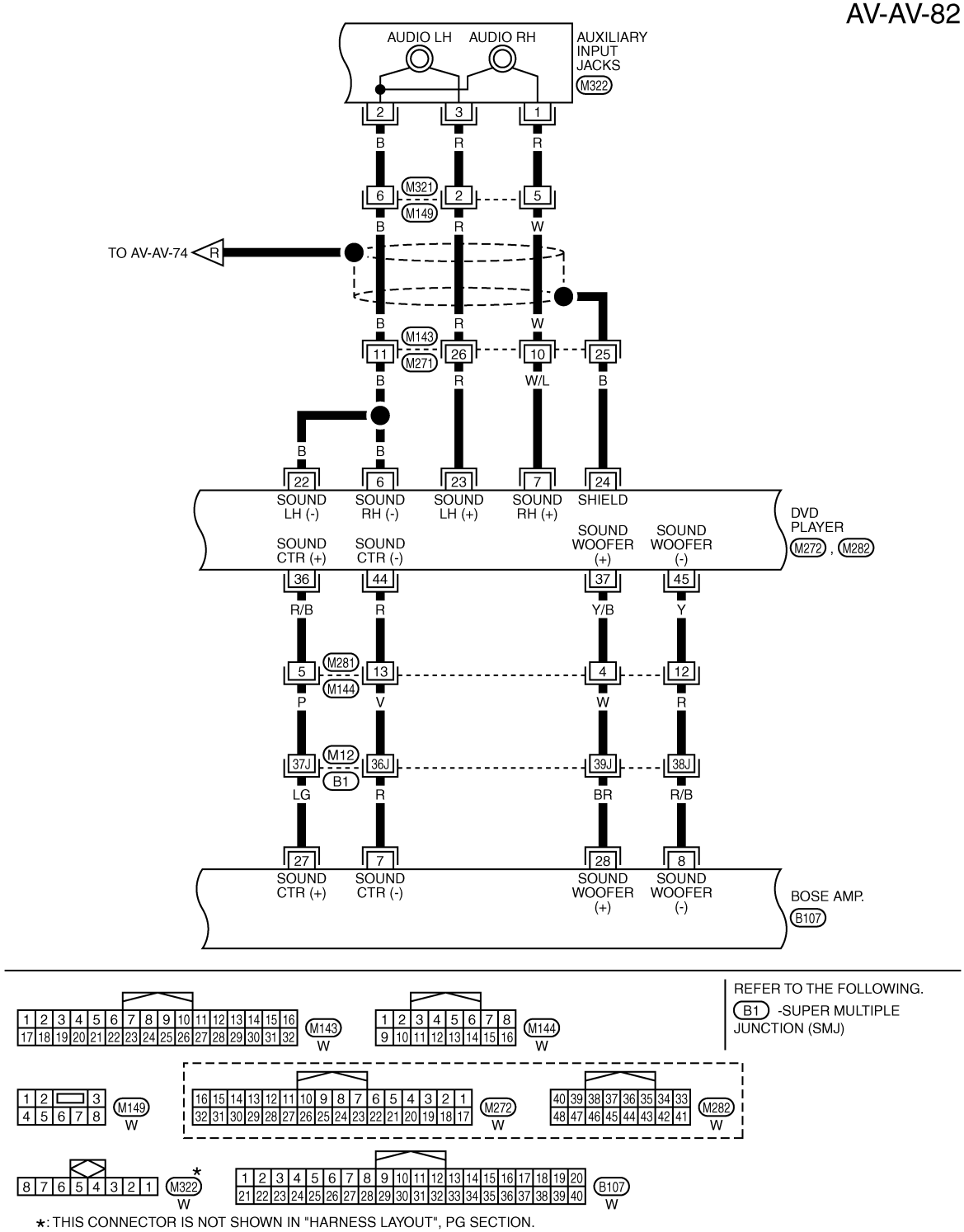




REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

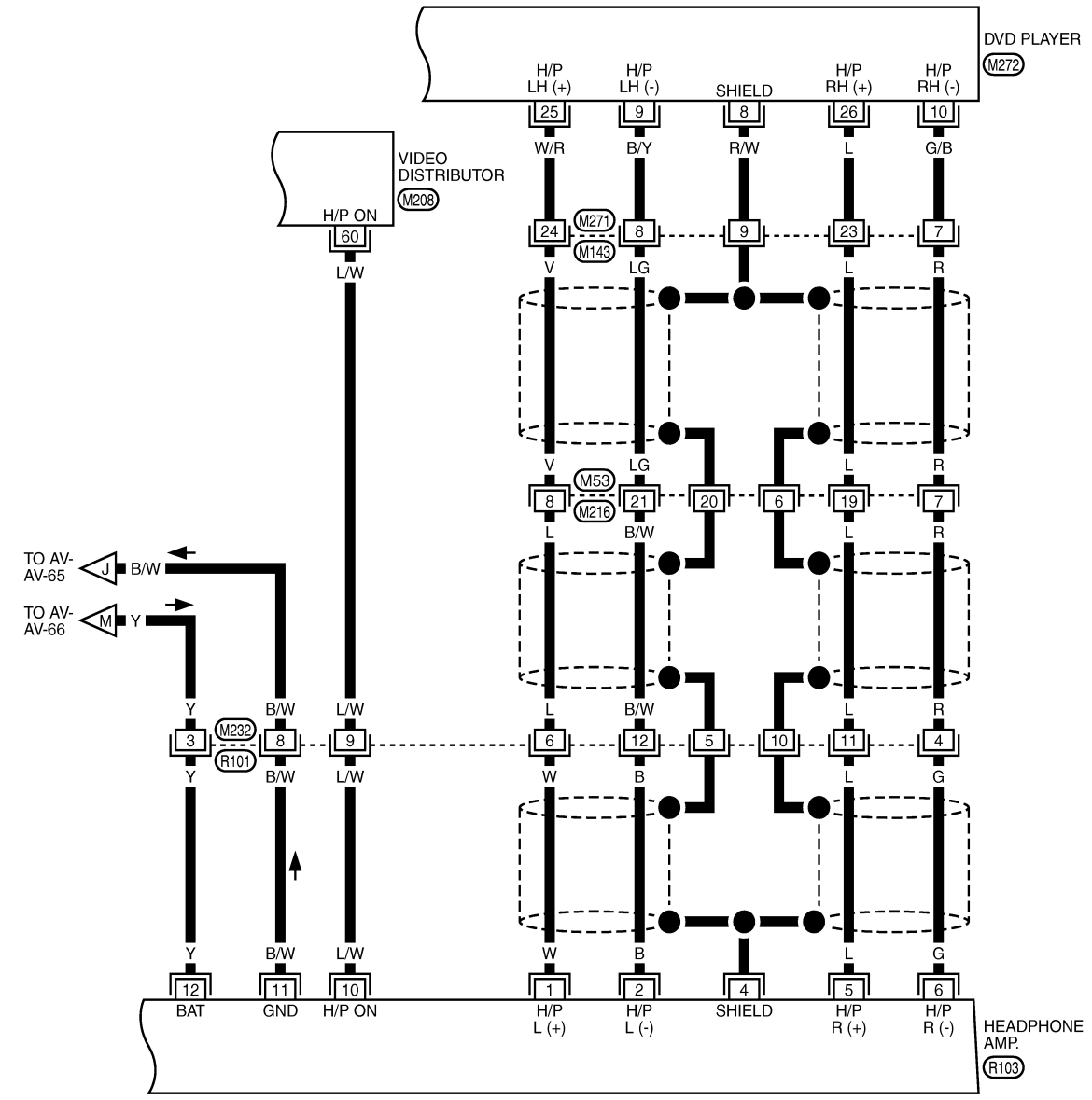
TKWT6764E

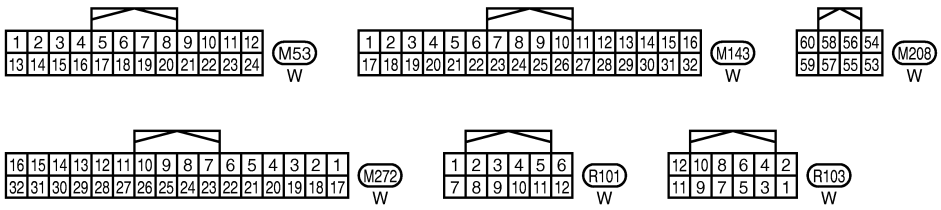
AV-AV-82



TKWT8309E

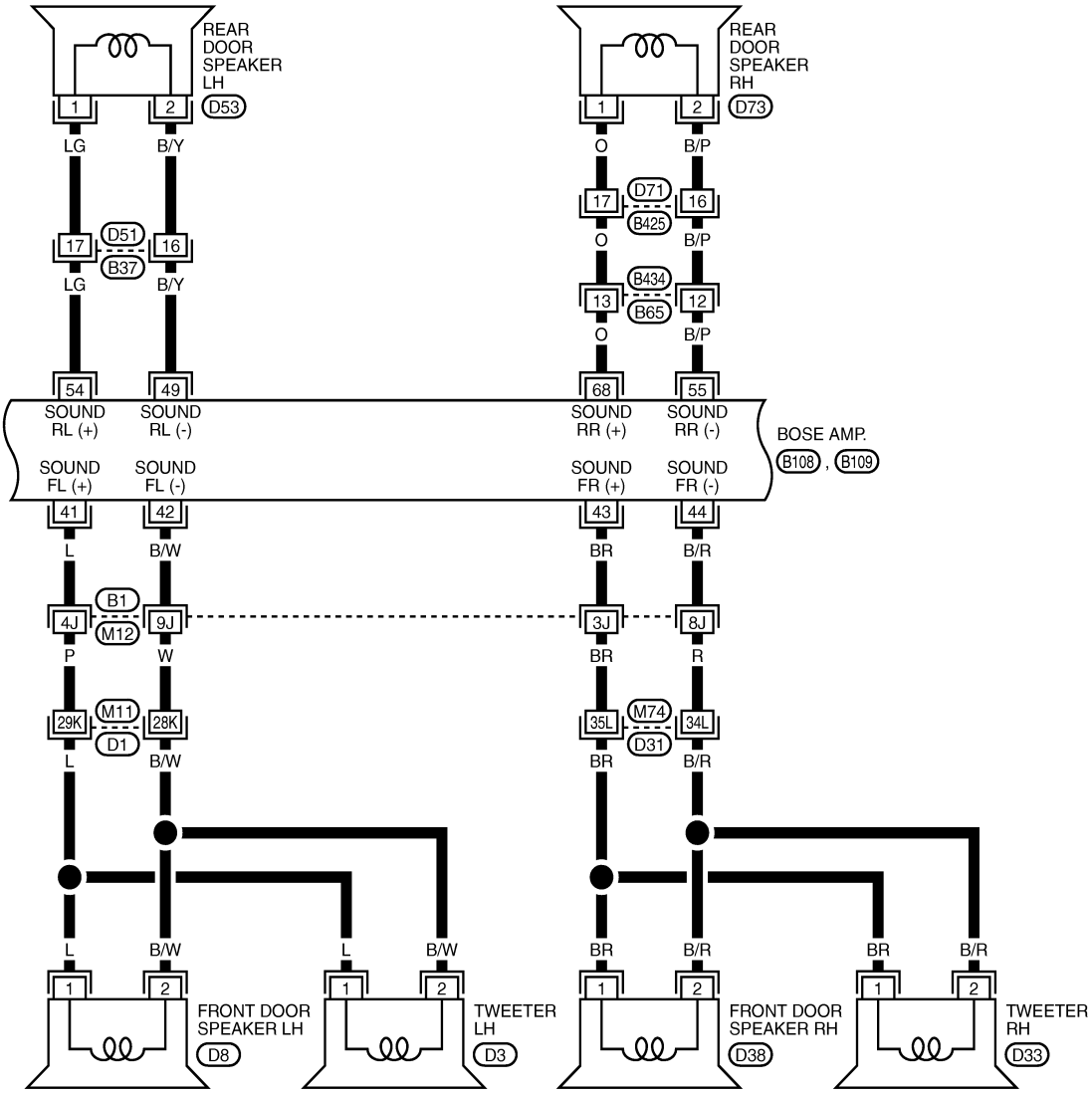
AV-AV-83

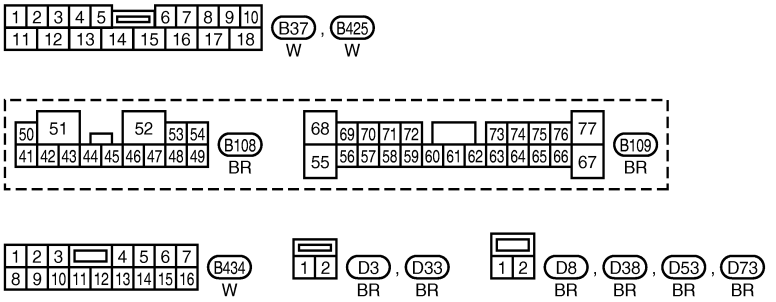




TKWT6766E

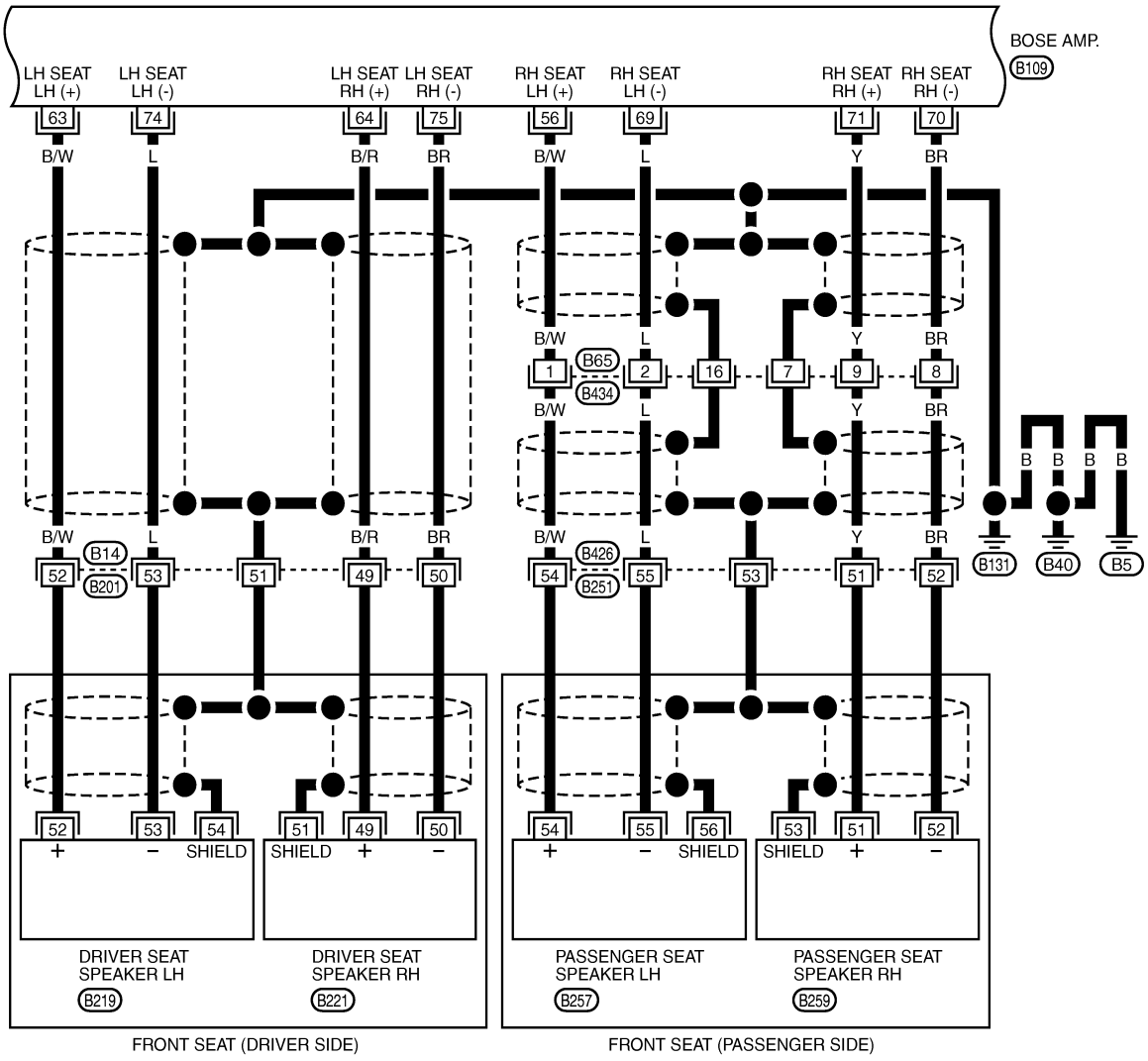
AV-AV-84

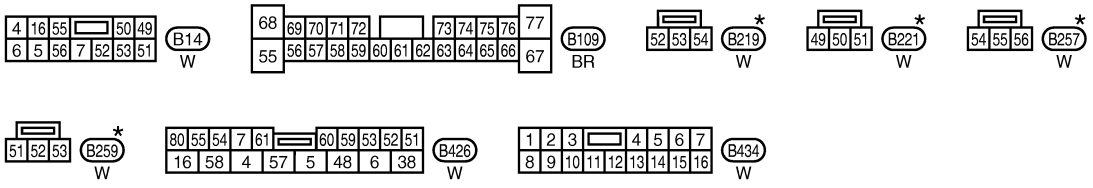




REFER TO THE FOLLOWING.
B1 , D1 , D31 - SUPER MULTIPLE JUNCTION (SMJ)

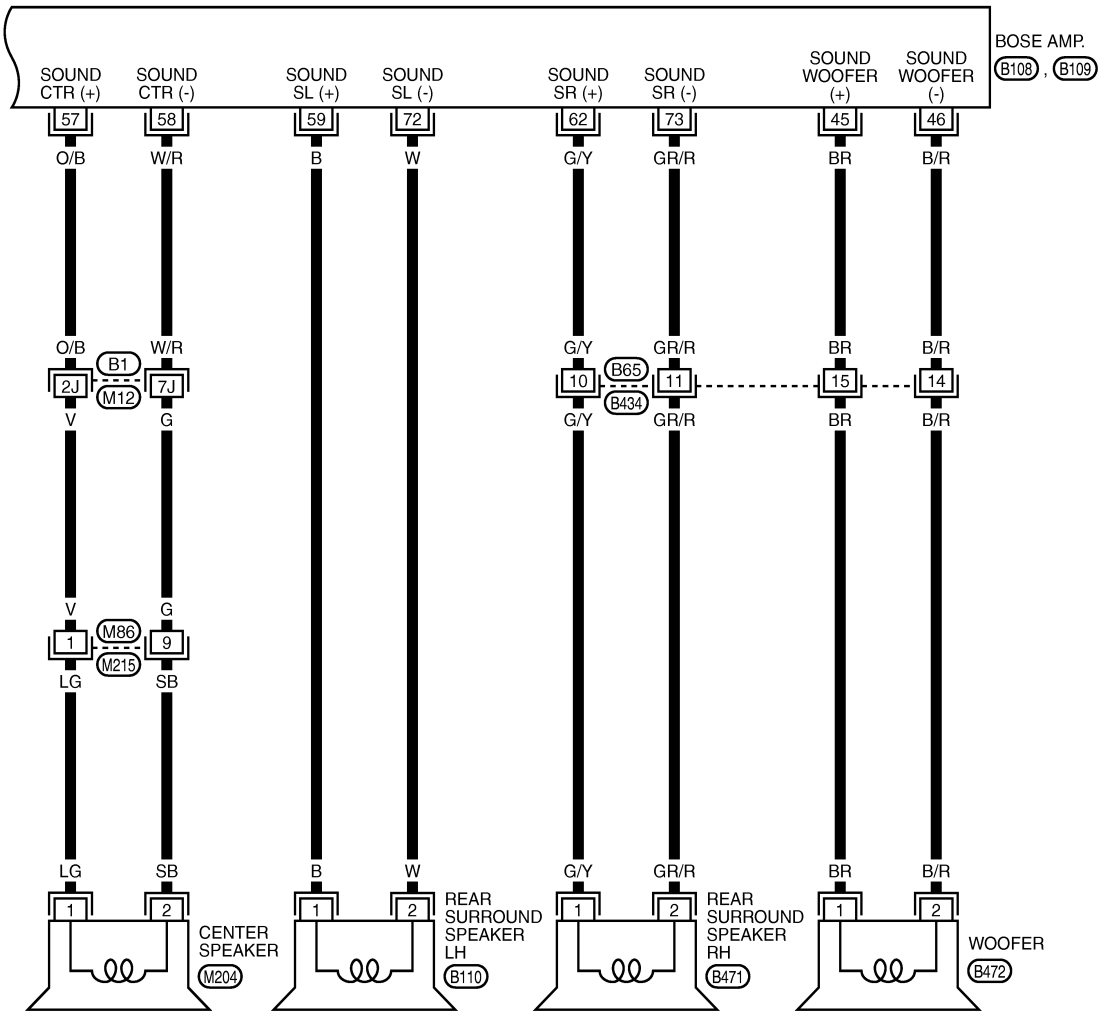
TKWT6767E

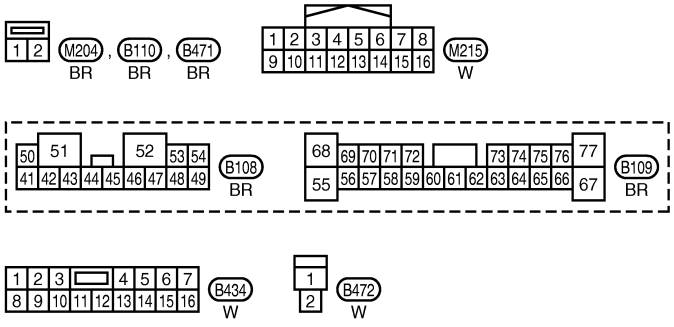




*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT6768E

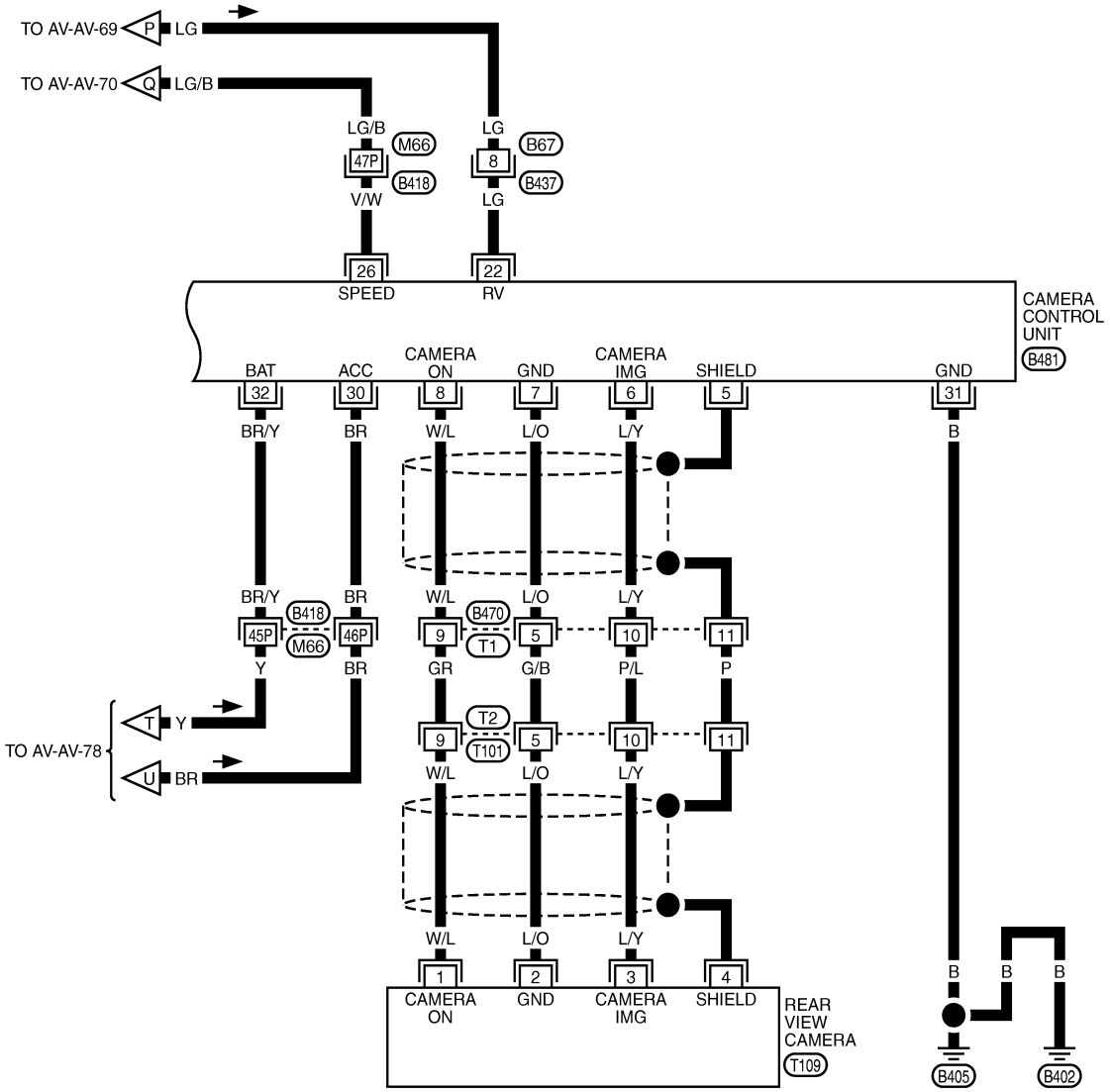


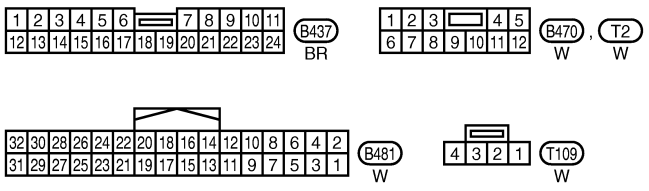


REFER TO THE FOLLOWING.
B1 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6769E

AV-AV-87





REFER TO THE FOLLOWING.
B418 - SUPER MULTIPLE JUNCTION (SMJ)

TKWT6770E

SYMPTOM DIAGNOSIS

MULTI AV SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000004156111

RELATED TO NAVIGATION

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
Multifunction switch and preset switch operation does not work.	• All switches cannot be operated. • “MULTI AV” is displayed on system selection screen when the CONSULT-III is started.	• Multifunction switch power supply and ground circuit. • AV communication circuit between AV control unit and multifunction switch. Perform CONSULT-III self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".
	• All switches cannot be operated. • “MULTI AV” is not displayed on system selection screen when the CONSULT-III is initialized.	AV control unit power supply and ground circuit malfunction. Refer to AV-594, "AV CONTROL UNIT : Diagnosis Procedure".
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-diagnosis function. Refer to AV-545, "Diagnosis Description".
Rear control switch operation dose not work.	There is malfunction in the on board-diagnosis result.	Perform on board-diagnosis. Refer to AV-545, "Diagnosis Description".
	Only specified switch cannot be operated.	Rear control switch malfunction. Replace rear control switch. Refer to AV-1080, "Removal and Installation".
Fuel economy display, vehicle setting operation is abnormal.	There is malfunction in the CONSULT-III self-diagnosis result.	Perform detected DTC self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".
	There is no malfunction in the self-diagnosis results.	AV control unit Ignition signal circuit malfunction. Refer to AV-594, "AV CONTROL UNIT : Diagnosis Procedure".
Guide sound is not heard.	On the setting display select “system sound (guide sound volume, etc.),” and confirm that guide sound is ON.	AV control unit malfunction. Replace AV control unit. Refer to AV-1064, "Exploded View".

RELATED TO HANDS-FREE PHONE

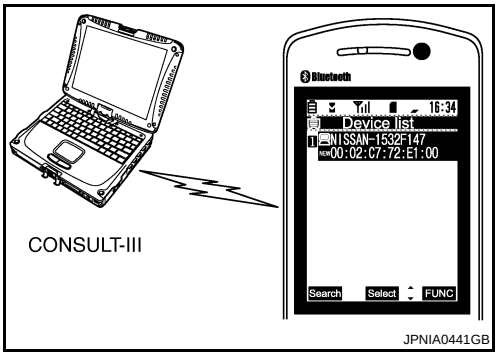
- Check that the cellular phone is corresponding type (Bluetooth™ correspond) when the hands-free related malfunction vehicle is in service before performing a diagnosis.
- There is a case that malfunction occurs due to the version change of the phone type, etc. even though it is a corresponding type. Therefore, confirm it by changing the cellular phone to another corresponding type phone, and check that it operates normally. It is necessary to distinguish whether the cause is the vehicle or cellular phone.

Simple check for Bluetooth™ communication

If cellular phone and AV control unit cannot be connected with Bluetooth™ communication, following procedure allows the technician to judge which device has malfunction.

1. Turn on a cellular phone, not connecting Bluetooth™ communication.
2. Start CONSULT-III, then start Windows®.
3. Set CONSULT-III near a cellular phone.

4. When operated Bluetooth™ registration by cellular phone, check if CONSULT-III* would be displayed on the device name.
(If other Bluetooth™ device is located near cellular phone, a name of the device would be displayed also.)
NOTE:
*:Displayed device name is “NISSAN-********”.



- If no device name is displayed, cellular phone is malfunctioning. Repair the cellular phone first, then perform diagnosis.
- If CONSULT-III is displayed on device name, cellular phone is normal. Perform diagnosis as per the following table.

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection. (no connection is displayed on the display at the guide.)	Repeat the registration of cellular phone.	AV control unit malfunction. Replace AV control unit. Refer to AV-1064, "Exploded View".
Hands-free phone cannot be established.	• Hands-free phone operation can be made, but the communication cannot be established. • Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation.	AV control unit malfunction. Replace AV control unit. Refer to AV-1064, "Exploded View".
The other party's voice cannot be heard by hands-free phone.	Check the “microphone speaker” in Inspection & Adjustment Mode if sound is heard.	AV control unit malfunction. Replace AV control unit. Refer to AV-1064, "Exploded View".
	Check the “microphone speaker” in Inspection & Adjustment Mode if sound is not heard.	AV control unit malfunction. Replace AV control unit. Refer to AV-1064, "Exploded View".
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	AV control unit malfunction. Replace AV control unit. Refer to AV-1064, "Exploded View".
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-619, "Diagnosis Procedure".

RELATED TO CAMERA

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
Camera image is not displayed (displayed in black and nothing can be displayed).	For front display unit, AUX and DVD image are not displayed.	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-606, "Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-607, "Diagnosis Procedure".
Camera image is not shown. (Vehicle width and possible route line is displayed.)	—	• Camera image signal circuit between camera control unit and rear view camera. Refer to AV-622, "Diagnosis Procedure". • Rear view camera ON signal circuit. Refer to AV-623, "Diagnosis Procedure".

Symptoms	Check items	Probable malfunction location
Camera image is not displayed. (Only warning message under area is displayed.)	There is malfunction in the CONSULT-III self-diagnosis result.	Perform detected DTC self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".
	For front display unit, AUX and DVD image are normal.	Camera image signal circuit malfunction between camera control unit and front display unit. Refer to AV-624, "Diagnosis Procedure".
	For front display unit, AUX and DVD image are not displayed.	RGB area (YS) signal circuit malfunction between AV control unit and front display unit. Refer to AV-605, "Diagnosis Procedure".
	Select “Camera Cont.” of Confirmation/ Adjustment mode, Reverse Sensor is not turned ON at “Connection Confirmation”.	Reverse signal circuit malfunction (camera control unit).
Camera image is rolling.	For front display unit, AUX and DVD image are also rolling.	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-606, "Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-607, "Diagnosis Procedure".
Camera image does not switch.	Malfunction of self-diagnosis result is indicated.	Camera-connection recognition signal circuit malfunction between AV control unit and camera control unit. Refer to AV-590, "Diagnosis Procedure".
	Malfunction of self-diagnosis result is not indicated.	Reverse signal circuit malfunction (AV control unit).
Possible route line is indicated abnormally when camera image is displayed.	There is malfunction in the CONSULT-III self-diagnosis result.	Perform detected DTC self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".

RELATED TO RGB IMAGE (FRONT DISPLAY UNIT)

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
RGB image is not shown.	• All RGB images are not shown. • “MULTI AV” is displayed on system selection screen when the CONSULT-III is started.	Perform CONSULT-III self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".
	• All RGB images are not shown. • “MULTI AV” is not displayed on system selection screen when the CONSULT-III is started.	AV control unit power supply and ground circuit malfunction. Refer to AV-594, "AV CONTROL UNIT : Diagnosis Procedure".
Color of RGB image is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit malfunction between AV control unit and front display unit. Refer to AV-601, "Diagnosis Procedure".
	Purple (Magenta) tint.	RGB signal (G: green) circuit malfunction between AV control unit and front display unit. Refer to AV-602, "Diagnosis Procedure".
	Screen looks yellowish.	RGB signal (B: blue) circuit malfunction between AV control unit and front display unit. Refer to AV-603, "Diagnosis Procedure".
RGB screen is rolling.	Front display unit, AUX and DVD image are normal.	RGB synchronizing signal circuit malfunction between AV control unit and front display unit. Refer to AV-604, "Diagnosis Procedure".

RELATED TO REAR DISPLAY

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
The menu screen is not displayed.	For rear display unit, AUX and DVD image are normal.	• Vertical synchronizing (VP) signal circuit malfunction between video distributor and rear display unit. Refer to AV-614, "Diagnosis Procedure". • Horizontal synchronizing (HP) signal circuit malfunction between video distributor and rear display unit. Refer to AV-615, "Diagnosis Procedure". • RGB area (YS) signal circuit malfunction between video distributor and rear display unit. Refer to AV-616, "Diagnosis Procedure".
Color of RGB image (menu display screen) is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit malfunction between video distributor and rear display unit. Refer to AV-610, "Diagnosis Procedure".
	Purple (Magenta) tint.	RGB signal (G: green) circuit malfunction between video distributor and rear display unit. Refer to AV-611, "Diagnosis Procedure".
	Screen looks yellowish.	RGB signal (B: blue) circuit malfunction between video distributor and rear display unit. Refer to AV-612, "Diagnosis Procedure".
AUX and DVD image are not displayed.	Also, front display unit is not displayed.	Perform CONSULT-III self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".
	Front display unit is normal.	Composite image signal circuit malfunction between video distributor and rear display unit. Refer to AV-609, "Diagnosis Procedure".
AUX and DVD image are rolling.	Front display unit displayed, AUX and DVD image are not rolling.	Composite synchronizing signal circuit malfunction between video distributor and rear display unit. Refer to AV-613, "Diagnosis Procedure".
Rear display unit does not open.	For front display unit, AUX and DVD image are not displayed.	Video distributor power supply and ground circuits malfunction. Refer to AV-596, "VIDEO DISTRIBUTOR : Diagnosis Procedure".
	For front display unit, AUX image displayed.	Perform detected DTC self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".

RELATED TO VOICE CONTROL

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
The voice cannot be controlled even if the voice control screen is displayed.	Voice sounds at “Voice Microphone Test” of Confirmation/Adjustment mode.	AV control unit malfunction. Replace AV control unit. Refer to AV-1064, "Exploded View".
	Voice does not sound at “Voice Microphone Test” of Confirmation/Adjustment mode.	Microphone circuit malfunction. Refer to AV-619, "Diagnosis Procedure".
The voice cannot be controlled (Voice control screen is not displayed).	Steering switch's “VOL DOWN”, “VOL UP”, “” switch works, but “” it does not work.	Steering switch malfunction. Replace steering switch. Refer to AV-1079, "Exploded View".
	Steering switch's “VOL DOWN”, “VOL UP”, “”, “” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-625, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch signal GND circuit malfunction. Refer to AV-629, "Diagnosis Procedure".

RELATED TO AUDIO

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
The CD cannot be removed.	Check the mechanical operation of eject switch.	Perform CONSULT-III self-diagnosis. When detecting no malfunction in those components, replace AV control unit. Refer to AV-560, "CONSULT-III Function (MULTI AV)".
Audio sound is not heard.	No sound from all speakers.	Perform CONSULT-III self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".
There is no sound from speaker on the right or left side.	—	Sound signal circuit malfunction between AV control unit and BOSE amp. at the side where there is no sound.
There is no sound from front door and tweeter on the right or left side.	—	Sound signal circuits malfunction between BOSE amp. and speaker on the side where there is no sound.
There is no sound from one of speakers.	—	Sound signal circuit malfunction between BOSE amp. and speaker on the side where there is no sound.
AudioPilot® does not work.	—	AudioPilot® Microphone circuits malfunction between BOSE amp. and AudioPilot® Microphone. • BOSE 2ch system refer to AV-620, "BOSE AUDIO 2CH SYSTEM : Diagnosis Procedure". • BOSE surround audio 5.1ch system refer to AV-621, "BOSE SURROUND AUDIO 5.1CH SYSTEM : Diagnosis Procedure"
Satellite radio is not received.	There is malfunction in the CONSULT-III self-diagnosis result.	Perform CONSULT-III self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".
	There is no malfunction in the CONSULT-III self-diagnosis result.	Perform the following inspection procedure. 1. Check satellite radio antenna mounting nut for looseness. **NOTE:** Tightening torque: 6.5 N·m (0.66 kg-m, 58 in-lb) 2. Visually check for satellite radio antenna feeder. 3. Replace the satellite radio antenna. Refer to AV-1091, "Exploded View". 4. Replace the AV control unit. Refer to AV-1064, "Exploded View".
AM/FM radio is not received.	Other audio sounds are normal.	• Antenna amp. ON signal circuit. • Antenna feeder.

RELATED TO iPod®

Connect another iPod® and check if the symptom is reproduced or not. If the symptom is reproduced, diagnose the vehicle. If no malfunction is detected, replace the iPod harness.

NOTE:

It is unable to check that between iPod® and iPod harness.

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
The sound of iPod® is not heard.	Other audio sounds are normal.	• iPod sound signal circuit between AV control unit and iPod adapter. • iPod sound signal circuit between iPod® and iPod adapter.
It does not change to iPod mode.	There is malfunction in the CONSULT-III self-diagnosis.	Perform CONSULT-III self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".
"iPod is not connected" is displayed when it comes to iPod mode.	Connected to iPod®.	iPod connection recognition signal circuit between iPod® and iPod adapter.
iPod® cannot charge the battery.	—	iPod battery charge circuit between iPod® and iPod adapter.

Symptoms	Check items	Possible malfunction location / Action to take
The title of music file in the iPod® is not indicated.	—	Serial communication circuit between iPod® and iPod adapter.
Accessing the iPod® is unavailable from the vehicle.		

RELATED TO STEERING SWITCH

Trouble diagnosis chart by symptom

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch signal GND circuit malfunction. Refer to AV-629, "Diagnosis Procedure".
Only specified switch (1) cannot be operated.	Steering switch malfunction. Refer to AV-1079, "Exploded View".
Steering switch's “SOURCE”, “MENU UP”, “MENU”, “DOWN”, “ENTER” switches do not work.	Steering switch signal A circuit malfunction. Refer to AV-625, "Diagnosis Procedure".
Steering switch's “”, “VOL UP”, “VOL DOWN”, “” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-627, "Diagnosis Procedure".

RELATED TO AUXILIARY INPUT

NOTE:

Check that there is no malfunction of AUX equipment main body before performing a diagnosis.

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
Front display unit and rear display unit, AUX image is not displayed.	Also, DVD image is not displayed.	Perform CONSULT-III self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".
For front display unit, AUX image is not displayed (Menu display is normal).	DVD image is normal.	AUX image signal circuit malfunction between auxiliary input jacks and video distributor.
	Also, DVD image is not displayed (Menu display is normal).	Perform CONSULT-III self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)". When detecting no malfunction in those components, the following items are a possible cause. • Composite image signal circuits malfunction between video distributor and front display unit. Refer to AV-608, "Diagnosis Procedure". • RGB area (YS) signal circuit malfunction between AV control unit and front display unit. Refer to AV-605, "Diagnosis Procedure".
For front display unit, AUX image is not displayed (Menu display is not displayed, too).	Also, DVD image is not displayed (Also, menu display is not displayed).	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-606, "Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-607, "Diagnosis Procedure".
For front display unit, AUX image is rolling.	DVD image is rolling.	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-606, "Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-607, "Diagnosis Procedure".
For rear display unit, AUX image is not displayed (Menu display is normal).	Also, DVD image is not displayed (Menu display is normal).	Composite image signal circuits malfunction between video distributor and rear display unit. Refer to AV-609, "Diagnosis Procedure".

Symptoms	Check items	Probable malfunction location
At AUX of rear display, menu display is not displayed.	AUX image is normal.	• Vertical synchronizing (VP) signal circuit malfunction between video distributor and rear display unit. Refer to AV-614, "Diagnosis Procedure". • Horizontal synchronizing (HP) signal circuit malfunction between video distributor and rear display unit. Refer to AV-615, "Diagnosis Procedure". • RGB area (YS) signal circuit malfunction between video distributor and rear display unit. Refer to AV-616, "Diagnosis Procedure".
For rear display unit, AUX and DVD image are rolling.	Front display unit displayed, AUX and DVD image are not rolling.	Composite synchronizing signal circuit malfunction between video distributor and rear display unit. Refer to AV-613, "Diagnosis Procedure".
There is no AUX sound.	—	Perform CONSULT-III self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".
There is no AUX sound from speaker on the right or left side.	BOSE 2ch models. • DVD sound is not normal, neither.	BOSE 2ch models. • DVD and AUX sound signal circuit malfunction between DVD player and AV control unit at the side where there is no sound.
	The sound other than AUX sound is normal.	BOSE 2ch models. • AUX sound signal circuit malfunction between auxiliary input jacks and DVD player at the side where there is no sound.
		BOSE surround audio 5.1ch models. • AUX sound signal circuit malfunction between auxiliary input jacks and DVD player at the side where there is no sound. • AUX sound signal circuit malfunction between AV control unit and DVD player at the side where there is no sound.
It does not change to AUX mode.	There is malfunction in the CONSULT-III self-diagnosis result.	Perform CONSULT-III self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".

RELATED TO DVD MODE

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
Front display unit and rear display unit, DVD image is not displayed.	Also, AUX image is not displayed.	Perform CONSULT-III self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".
For front display unit, DVD image is not displayed (Menu display is normal).	Also, AUX image is not displayed (Menu display is normal).	Perform CONSULT-III self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)". When detecting no malfunction in those components, the following items are a possible cause. • Composite image signal circuits malfunction between video distributor and front display unit. Refer to AV-608, "Diagnosis Procedure". • RGB area (YS) signal circuit malfunction between AV control unit and front display unit. Refer to AV-605, "Diagnosis Procedure".
For front display unit, DVD image is not displayed (Also, menu display is not displayed).	Also, AUX image is not displayed (Also, menu display is not displayed).	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-606, "Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-607, "Diagnosis Procedure".
For front display, DVD image is rolling.	AUX image is rolling.	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-606, "Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-607, "Diagnosis Procedure".

Symptoms	Check items	Probable malfunction location
For rear display, DVD image is not displayed (Menu display is normal).	Also, AUX image is not displayed (Menu display is normal).	Composite image signal circuits malfunction between video distributor and rear display unit. Refer to AV-609, "Diagnosis Procedure".
At DVD of rear display unit, menu display is not displayed.	DVD image is normal.	• Vertical synchronizing (VP) signal circuit malfunction between video distributor and rear display unit. Refer to AV-614, "Diagnosis Procedure". • Horizontal synchronizing (HP) signal circuit malfunction between video distributor and rear display unit. Refer to AV-615, "Diagnosis Procedure". • RGB area (YS) signal circuit malfunction between video distributor and rear display unit. Refer to AV-616, "Diagnosis Procedure".
For rear display unit, DVD and AUX image are rolling.	Front display unit displayed, DVD and AUX image are not rolling.	Composite synchronizing signal circuit malfunction between video distributor and rear display unit. Refer to AV-613, "Diagnosis Procedure".
There is no DVD sound.	—	Perform CONSULT-III self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".
There is no DVD sound from one of speakers.	BOSE surround audio 5.1ch models. • Other audio sounds are normal.	BOSE 5.1ch models. • Sound signal circuit malfunction between BOSE amp. and DVD player on the side where there is no sound.
There is no DVD sound from speaker on the right or left side.	BOSE 2ch models. • AUX sound is not normal, neither.	BOSE 2ch models. • DVD and AUX sound signal circuit malfunction between DVD player and AV control unit at the side where there is no sound.
It does not change to DVD mode.	There is malfunction in the CONSULT-III self-diagnosis result.	Perform CONSULT-III self-diagnosis. Refer to AV-560, "CONSULT-III Function (MULTI AV)".

RELATED TO REMOTE CONTROL AND HEADPHONE

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
Headphone does not work	Change headphones to another set.	They operate normally. • Battery of headphones. • Headphones.
		It does not operate normally. • Headphone sound signal circuit malfunction between DVD player and headphone amp. • Headphone ON signal circuit malfunction between video distributor and headphone amp.
Remote control does not work.	Change remote controller to another one.	They operate normally. • Battery of remote controller. • Remote controller body.
		It does not operate normally. • Remote control power supply (VCC signal) circuit between video distributor and remote control receiver. • Remote control signal circuit between video distributor and remote control receiver.

NORMAL OPERATING CONDITION

Description

INFOID:0000000004156112

NOTE:
For Navigation system operation information, refer to Navigation system Owner's Manual.

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The systems in the video mode.	Push **<DISC-AUX>** to change the mode.
	The display is turned off.	Push **<Day/Night>** to turn on the display.
No voice guidance is available. Or The volume is too high or too low.	The volume is not set correctly, or it is turned off.	Adjust the volume of voice guidance.
	Voice guidance is not provided for certain streets (roads displayed in gray).	This is not a malfunction.
No map is displayed on the screen.	A screen other than map screen is displayed.	Push **<MAP>**.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the navigation system.

NOTE:
Locations stored in the Address Book and other memory functions may be lost if the vehicle's battery is disconnected or becomes discharged. If this occurs, service the vehicle's battery as necessary and re-enter the information in the Address Book.

RELATED TO VOICE RECOGNITION

Related to basic operation

Symptom	Possible cause	Possible solution
The system does not recognize your command. or The system recognizes your command incorrectly	The interior of the vehicle is too noisy.	Close the windows or have other occupants quiet.
	The volume of your voice is too low.	Speak louder.
	The volume if your voice is too loud.	Speak softer.
	Your pronunciation is unclear.	Speak clearly.
	You are speaking before the voice recognition is ready	Push and release " " switch on the steering switch, and speak a command after the tone sounds.
	8 seconds or more have passed after you pushed and released " " switch on the steering switch.	Make sure to speak a command within 8 seconds after you push and release " " switch on the steering switch.
	Only a limited range of voice commands is usable for each screen.	Use a correct voice command appropriate for the current screen.
	The fan of the air conditioner is too loud.	If the air conditioner is set to "Auto", the fan speed is automatically lowered and voice commands can be recognized more easily. Lower the fan speed as necessary or set the air conditioner to "Auto".

Related to item choice
The system should respond correctly to all voice commands without difficulty. If problems are encountered, follow the solutions given in this guide for the appropriate error.

Where the solutions are listed by number, try each solution in turn, starting with number one, until the problem is resolved.

Symptom/ error message	Solution
Displays “COMMAND NOT RECOGNIZED” or the system fails to interpret the command correctly.	1. Ensure that the command format is valid.
	2. Speak clearly without pausing between words and at a level appropriate to the ambient noise level.
	3. Ensure that the ambient noise level is not excessive, for example, windows open or defrost on. **NOTE:** If it is too noisy to use the phone, it is likely that voice commands will not be recognized.
	4. If optional words of the command have been omitted, then command should be tried with these in place.
The system consistently selects the wrong voicetag	1. Ensure that the voicetag requested matches what was originally stored. This can be confirmed by giving the “Addressbook” Directory or Phone Directory command.
	2. Replace one of the voicetags being confused with a different voicetag.

Related to telephone

The system should respond correctly to all voice commands without difficulty. If problems are encountered, try the following solutions.

Where the solutions are listed by number, try each solution in turn, starting with number 1, until the problem is resolved.

Symptom	Solution
System fails to interpret the command correctly.	1. Ensure that the command is valid.
	2. Ensure that the command is spoken after the tone.
	3. Speak clearly without pausing between words and at level appropriate to the ambient noise level in the vehicle.
	4. Ensure that the ambient noise level is not excessive (for example, windows open or defroster on). **NOTE:** If it is too noisy to use the phone, it is likely that the voice commands will not be recognized.
	5. If more than one command was said at a time, try saying the commands separately.
	6. If the system consistently fails to recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker. See “Speaker adaptation (SA) mode” earlier in this section. Refer to “OWNER’S MANUAL”.
The system consistently selects the wrong voicetag	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the “List Names” command.
	2. Replace one of the names being confused with a new name.

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD/cassette, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and then determine the cause.

NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.

Symptom	Cause and Counter measure
Cannot play	Check if the CD/CF was inserted correctly.
	Check if the CD/CF is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than ".MP3", ".WMA", ".mp3", or ".wma" cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
	Check if the CD/CF is protected by copyright.
Poor sound quality	Check if the CD/CF is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA CD/CF, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.
Move immediately to the next song when playing	When a non-MP3/WMA file has been given an extension of ".MP3", ".WMA", ".mp3", or ".wma", or when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.

Noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources, is not a malfunction.

NOTE:

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

RELATED TO VEHICLE ICON

Symptom	Possible cause	Possible solution
Names of roads differ between Plan View and Birdview®.	This is because the quantity of the displayed information is reduced so that the screen does not become too crowded. There is also a chance that names of the roads may be displayed multiple times, and the names appearing on the screen may be different because of a processing procedure.	This is not a malfunction.
The vehicle icon is not displayed in the correct position.	The vehicle was transported after the ignition switch was pushed off, for example, by a ferry or car transporter.	Drive the vehicle for a while on a road where GPS signals can be received.
	The position and direction of the vehicle icon may be incorrect depending on the driving environments and the levels of positioning accuracy of the navigation system.	This is not a malfunction. Drive the vehicle for a while to automatically correct the position and direction of the vehicle icon.
When the vehicle is traveling on a new road, the vehicle icon is located on another road nearby.	Because the new road is not stored in the map data, the system automatically places the vehicle icon on the nearest road available.	Updated road information will be included in the next version of the map data.

Symptom	Possible cause	Possible solution
The screen does not switch to the night screen even after turning on the headlights.	The daytime screen was set the last time the headlights were turned on.	Set the screen to the night screen mode using <Day/Night> when you turn on the headlights.
The map does not scroll even when the vehicle is moving.	The current location map screen is not displayed.	Push **<MAP>**.
The vehicle icon is not displayed.	The current location map screen is not displayed.	Push **<MAP>**.
The location of the vehicle icon is misaligned from the actual position.	When using tire chains or replacing the tires, speed calculations based on the speed sensor may be incorrect.	Drive the vehicle for a while (at approximately 19 MPH for about 30 minutes) to automatically correct the vehicle icon position. If this does not correct the vehicle icon position, contact an INFINITI dealer.
	The map data has a mistake or is incomplete (the vehicle icon position is always misaligned in the same area).	Updated road information will be included in the next version of the map data.

RELATED TO ROUTE CALCULATION AND VISUAL GUIDANCE

Symptom	Possible cause	Possible solution
Waypoints are not included in the auto reroute calculation.	Waypoints that you have already passed are not included in the auto reroute calculation.	If you want to go to that waypoint again, you need to edit the route.
Route information is not displayed.	Route calculation has not yet been performed.	Set the destination and perform route calculation.
	You are not driving on the suggested route.	Drive on the suggested route.
	Route guidance is set to off.	Turn on route guidance.
	Route information is not provided for certain types of roads (roads displayed in gray).	This is not a malfunction.
The auto reroute calculation (or detour calculation) suggests the same route as the one previously suggested.	Route calculations took priority conditions into consideration, but the same route was calculated.	This is not a malfunction.
A waypoint cannot be added.	Five waypoints are already set on the route, including ones that you have already passed.	A maximum of 5 waypoints can be set on the route. If you want to go to 6 or more waypoints, perform route calculations multiple times as necessary.
The suggested route is not displayed.	Roads near the destination cannot be calculated.	Reset the destination to a main or ordinary road, and recalculate the route.
	The starting point and destination are too close.	Set a more distant destination.
	The starting point and destination are too far away.	Divide your trip by selecting one or two intermediate destinations, and perform route calculations multiple times.
	There are time restricted roads (by the day of the week, by time) near the current vehicle location or destination.	Set [Use Time Restricted Roads] to off.
The part of the route that you have already passed is deleted.	A route is managed by sections between waypoints. If you passed the first waypoint, the section between the starting point and the waypoint is deleted. (It may not be deleted depending on the area.)	This is not a malfunction.
An indirect route is suggested.	If there are restrictions (such as one-way streets) on roads close to the starting point or destination, the system may suggest an indirect route.	Adjust the location of the starting of the starting point or destination.
	The system may suggest an indirect route because route calculation does not take into consideration some areas such as narrow streets (gray roads.)	Reset the destination to a main or ordinary road, and recalculate the route.

Symptom	Possible cause	Possible solution
The landmark information does not correspond to the actual information.	This may be caused by insufficient or incorrect map data.	Updated information will be included in the next version of the data.
The suggested route does not exactly connect to the starting point, waypoints, or destination.	There is no data for route calculation closes to these locations.	Set the starting point, waypoints and destination on a main road, and perform route calculation.

RELATED TO VOICE GUIDANCE

Symptom	Possible cause	Possible solution
Voice guidance is not available	Voice guidance is only available at certain intersections marked with? In some case, voice guidance is not available even when the vehicle should make a turn.	This is not a malfunction.
	The vehicle has deviated from the suggested route.	Go back to the suggested route or request route calculation again
	Voice guide is set to off.	Turn on voice guidance.
	Route guidance is set to off.	Turn on voice guidance.
The guidance contact does not correspond to the actual condition.	The contact of voice guidance may vary, depending on the types of intersections at which turn are made.	Follow all traffic rules and regulations.

RELATED TO TRAFFIC INFORMATION

Symptom	Possible cause	Possible solution
The traffic information is not displayed	The traffic information is not set to on.	Set the traffic information to on.
	You are in an area where traffic information is not available	Scroll to an area where traffic information is available
	You have not subscribed to XM NavTraffic or, your subscription to XM NavTraffic has expired.	Check your subscription status of XM NavTraffic.
	The map scale is set at a level where the display of icons is impossible.	Check that the map scale is set at a level in which the display of icons is possible.
With the automatic detour route search ON, no detour route is set to avoid congested areas.	There is no faster route compared to the current route, based on the road network and traffic information.	The automatic detour search is not intended for avoiding traffic jams. It searches for the fastest route taking into consideration such things as traffic jams.
The route does not avoid road section with traffic information stating it is closed due to road construction.	The navigation system is designed not to avoid this event because the actual period of closure may differ from the declared roadwork period.	Observe the actual road condition and follow the instructions on road for detour when necessary. If the road closure is for certain, use detour function and set the detour distance to avoid the closed road section.
Traffic information displayed differs from information from other media (e.g. radio).	Other media may use different information sources.	Observe the actual road conditions and regulations. Always observe safe driving practices and follow all traffic regulations.

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000005213741

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the “SUPPLEMENTAL RESTRAINT SYSTEM” and “SEAT BELTS” of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the “SUPPLEMENTAL RESTRAINT SYSTEM”.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precaution for SRS "AIR BAG" and "SEAT BELT PRE-TENSIONER" Service

INFOID:0000000004156114

- Do not use electrical test equipment to check SRS circuits unless instructed to in this Service Manual.
- Before servicing the SRS, turn ignition switch OFF, disconnect both battery cables and wait at least 3 minutes.
  For approximately 3 minutes after the cables are removed, it is still possible for the air bag and seat belt pretensioner to deploy. Therefore, do not work on any SRS connectors or wires until at least 3 minutes have passed.
- Diagnosis sensor unit must always be installed with their arrow marks “⇐” pointing towards the front of the vehicle for proper operation. Also check diagnosis sensor unit for cracks, deformities or rust before installation and replace as required.
- The spiral cable must be aligned with the neutral position since its rotations are limited. Do not turn steering wheel and column after removal of steering gear.
- Handle air bag module carefully. Always place driver and front passenger air bag modules with the pad side facing upward and seat mounted front side air bag module standing with the stud bolt side facing down.
- Conduct self-diagnosis to check entire SRS for proper function after replacing any components.
- After air bag inflates, the front instrument panel assembly should be replaced if damaged.
- Always replace instrument panel pad following front passenger air bag deployment.

Precaution for Trouble Diagnosis

INFOID:0000000004156115

AV COMMUNICATION SYSTEM

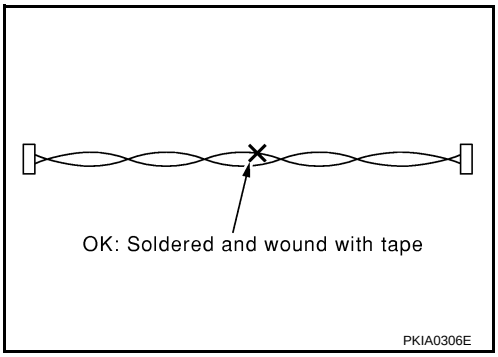
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

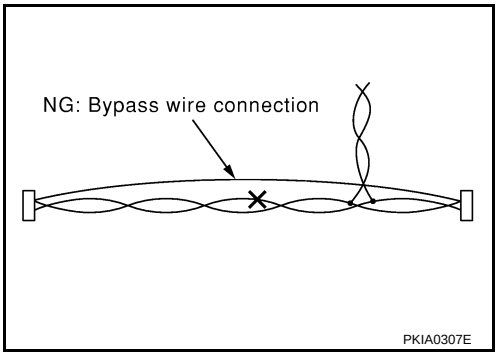
INFOID:0000000004156116

AV COMMUNICATION SYSTEM

- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]



- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)

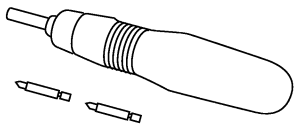


PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000004156117

Tool name	Description
Power tool  PBIC0191E	Loosening screws

ON-VEHICLE REPAIR

AV CONTROL UNIT

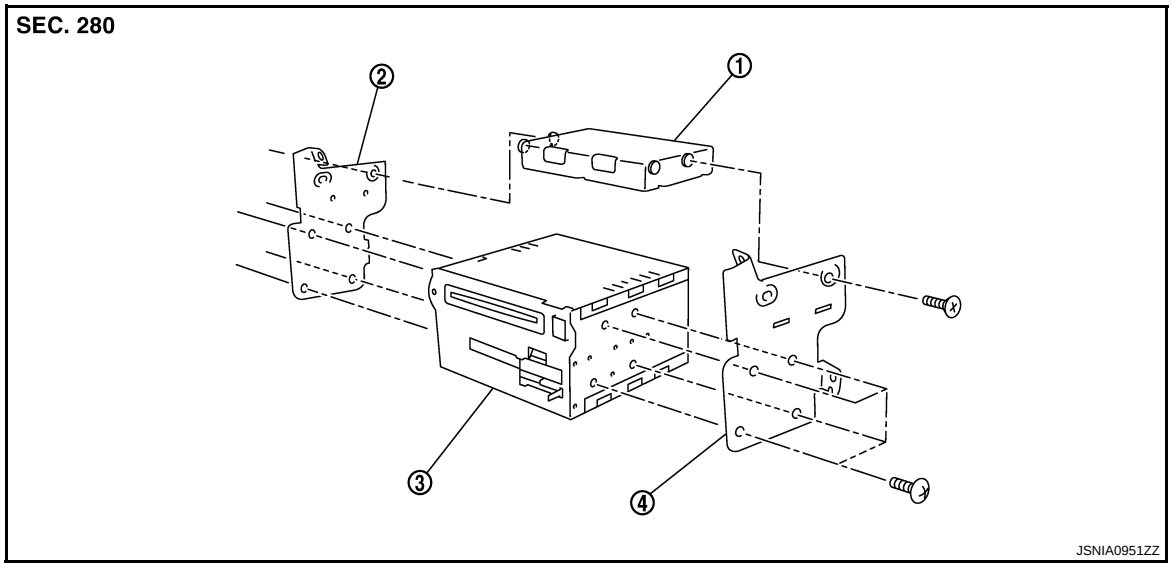
Exploded View

INFOID:0000000004156118

REMOVAL

Refer to IP-12, "INSTRUMENT PANEL : Component Parts Location".

DISASSEMBLY



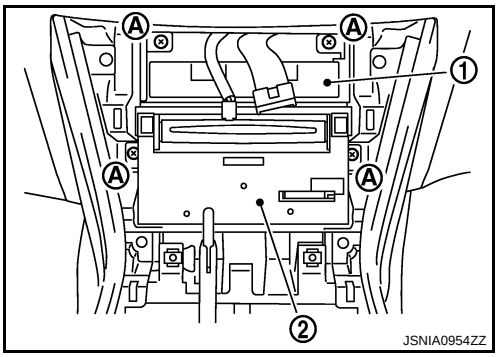
1. Unified meter and A/C amp.
2. Bracket LH
3. AV control unit
4. Bracket RH

Removal and Installation

INFOID:0000000004156119

REMOVAL

1. Remove cluster lid C. Refer to IP-19, "CLUSTER LID C : Removal and Installation".
2. Remove screws (A) and remove AV control unit (2) in conjunction with unified meter and A/C amp. (1).
3. Remove bracket screws, and then remove AV control unit.



INSTALLATION

Install in the reverse order of removal.

CAUTION:

Unified meter and A/C amp. screws are different from other securing screws. Never confuse them when installing.

FRONT DISPLAY UNIT

Exploded View

INFOID:0000000004156120

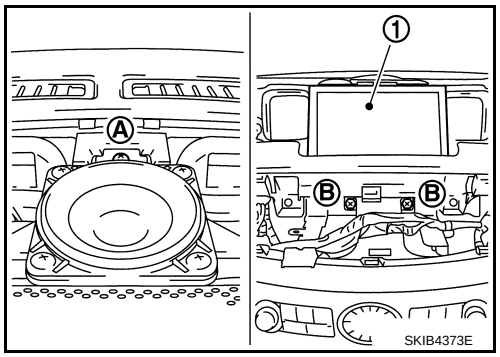
Refer to IP-12, "INSTRUMENT PANEL : Component Parts Location".

Removal and Installation

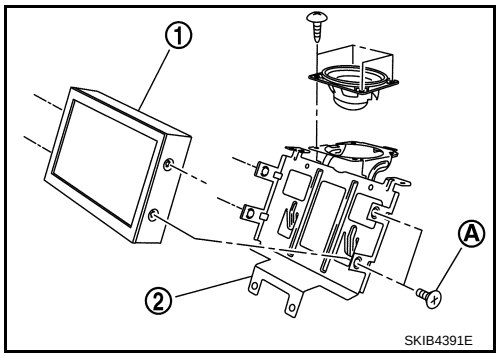
INFOID:0000000004156121

REMOVAL

1. Remove center ventilator grille. Refer to IP-12, "INSTRUMENT PANEL : Component Parts Location".
2. Remove multifunction switch. Refer to AV-1077, "Removal and Installation".
3. Remove screw (A).
4. Remove screws (B) and disconnect connector, and remove display (1) center speaker comes off accordingly.



5. Remove screws (A) separate front display unit (1) from bracket (2).



INSTALLATION

Install in the reverse order of removal.

REAR DISPLAY UNIT

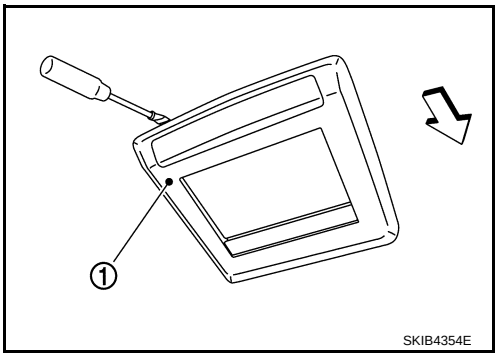
Removal and Installation

INFOID:0000000004156122

REMOVAL

1. Insert cloth-covered driver into gaps between rear display cover (1) and headlining, and remove rear display cover.

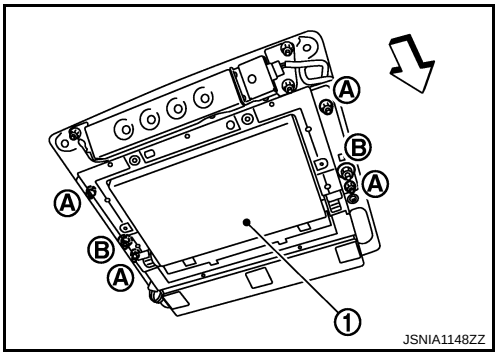
   ⇦: Vehicle front



2. Remove nuts (A) and plastic nuts (B).

   ⇦: Vehicle front

3. Disconnect connector, and remove rear display unit (1).



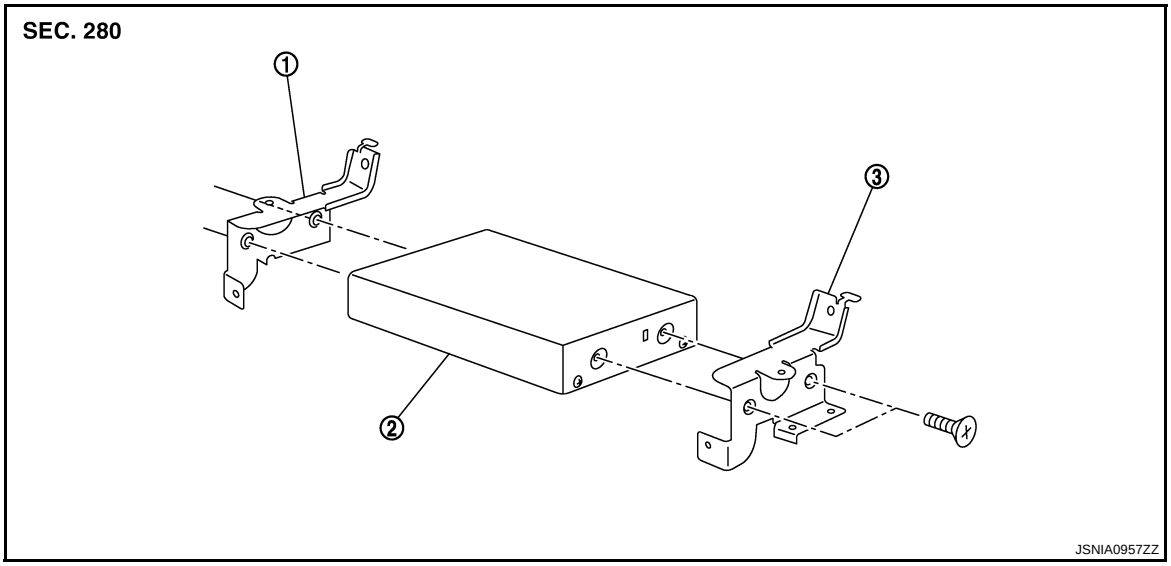
INSTALLATION

Install in the reverse order of removal.

VIDEO DISTRIBUTOR

Exploded View

INFOID:0000000004156123



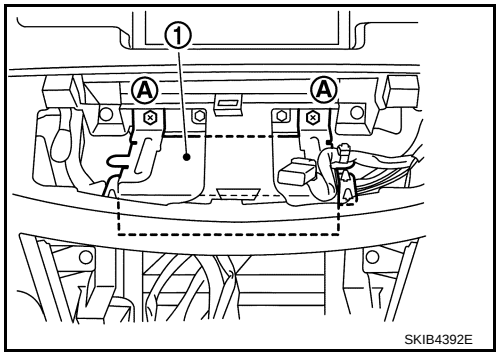
1. Bracket LH
2. Video distributor
3. Bracket RH

Removal and Installation

INFOID:0000000004156124

REMOVAL

1. Remove multifunction switch. Refer to AV-1077, "Removal and Installation".
2. Remove AV control unit. Refer to AV-1064, "Removal and Installation".
3. Remove screws (A).
4. Disconnect connector and remove video distributor (1)



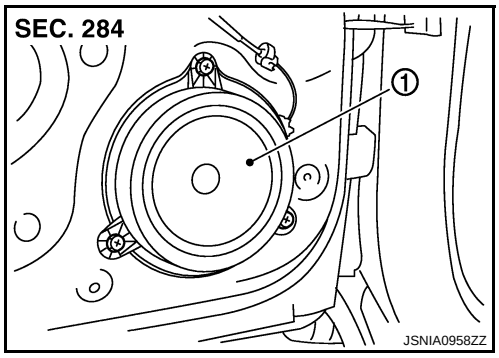
INSTALLATION

Install in the reverse order of removal.

FRONT DOOR SPEAKER

Exploded View

INFOID:0000000004156125



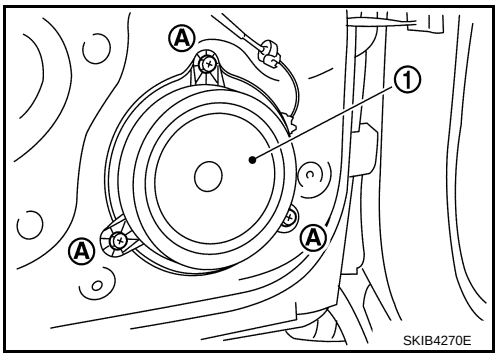
1. Front door speaker

Removal and Installation

INFOID:0000000004156126

REMOVAL

1. Remove front door finisher. Refer to EI-46, "Removal and Installation".
2. Remove screws (A) and remove front door speaker (1).



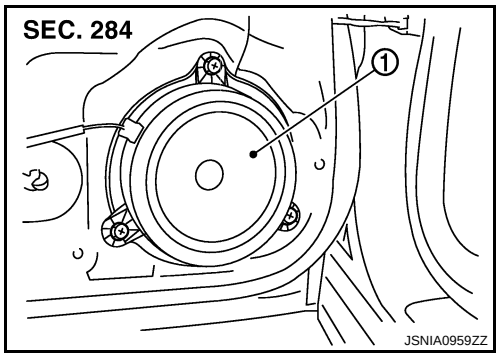
INSTALLATION

Install in the reverse order of removal.

REAR DOOR SPEAKER

Exploded View

INFOID:0000000004156127



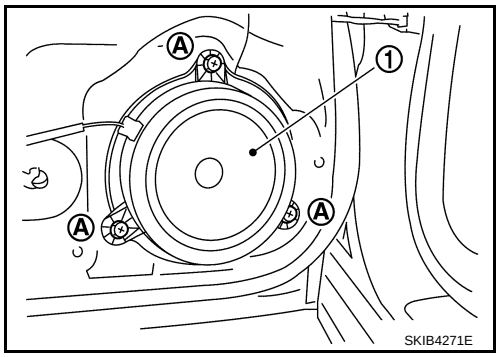
1. Rear door speaker

Removal and Installation

INFOID:0000000004156128

REMOVAL

1. Remove rear door finisher. Refer to EI-46, "Removal and Installation".
2. Remove screws (A) and remove rear door speaker (1).



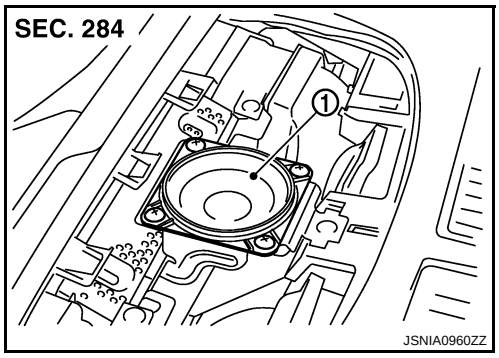
INSTALLATION

Install in the reverse order of removal.

CENTER SPEAKER

Exploded View

INFOID:0000000004156129



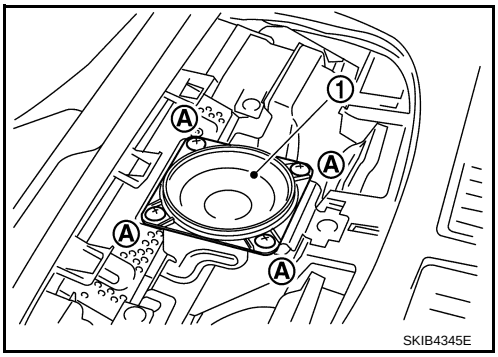
1. Center speaker

Removal and Installation

INFOID:0000000004156130

REMOVAL

1. Remove upper ventilator grill. Refer to IP-12, "INSTRUMENT PANEL : Component Parts Location".
2. Remove screws (A) and disconnect connector.
3. Remove center speaker (1).



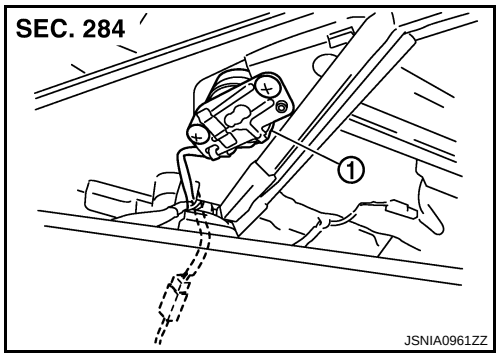
INSTALLATION

Install in the reverse order of removal.

TWEETER

Exploded View

INFOID:0000000004156131



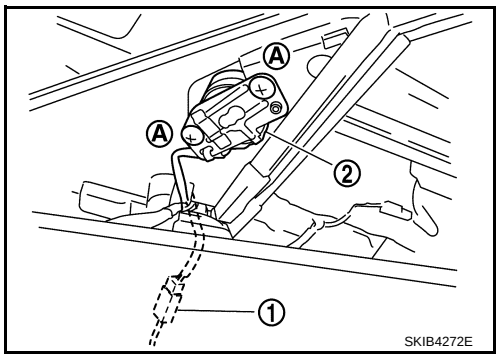
1. Tweeter

Removal and Installation

INFOID:0000000004156132

REMOVAL

1. Remove front door finisher. Refer to EI-46, "Removal and Installation".
2. Remove door sash inner cover (front). Refer to EI-46, "Component Parts Location".
3. Remove screws (A), and disconnect connector (1).
4. Remove tweeter (2).



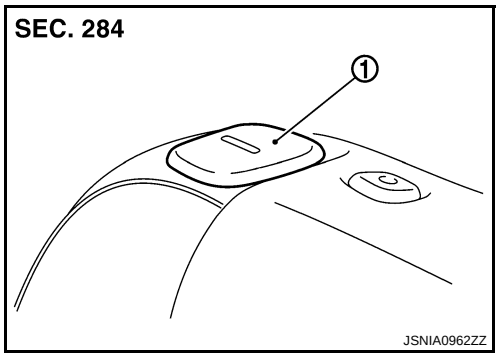
INSTALLATION

Install in the reverse order of removal.

SEAT SPEAKER

Exploded View

INFOID:0000000004156133



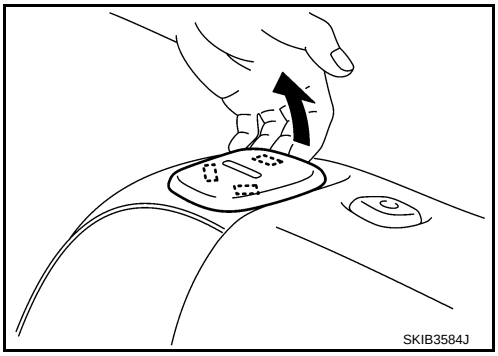
1. Seat speaker

Removal and Installation

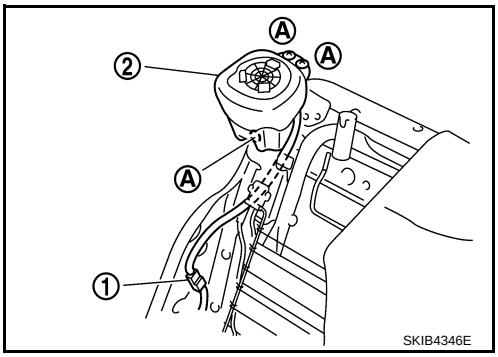
INFOID:0000000004156134

REMOVAL

1. Remove seat speaker grill as shown in the figure.
   CAUTION:
   Never reuse seat speaker grill. The pawl is broken when removing.



2. Remove front seat back trim and pad. Refer to SE-147, "Removal and Installation".
3. Remove screws (A) and disconnect connector (1).
4. Remove seat speaker (2).



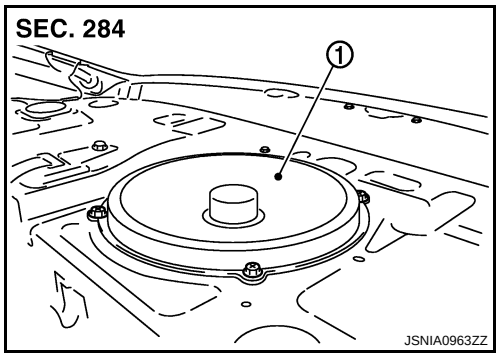
INSTALLATION

Install in the reverse order of removal.

WOOFER

Exploded View

INFOID:0000000004156135



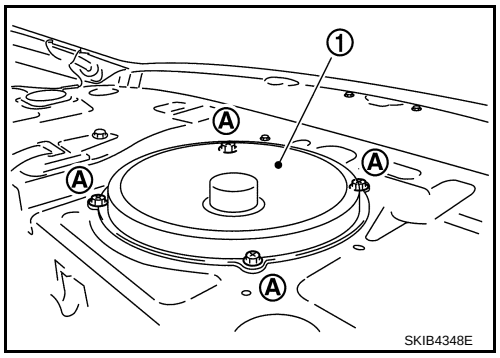
1. Woofer

Removal and Installation

INFOID:0000000004156136

REMOVAL

1. Remove rear parcel shelf finisher. Refer to EI-53, "Removal and Installation".
2. Remove screws (A) and disconnect connector.
3. Remove rear woofer (1) from rear parcel shelf.



INSTALLATION

Install in the reverse order of removal.

REAR SURROUND SPEAKER

Removal and Installation

INFOID:0000000004156137

REMOVAL

1. Remove rear parcel shelf finisher. Refer to EI-53, "Removal and Installation".
2. Remove rear surround speaker from rear parcel shelf.

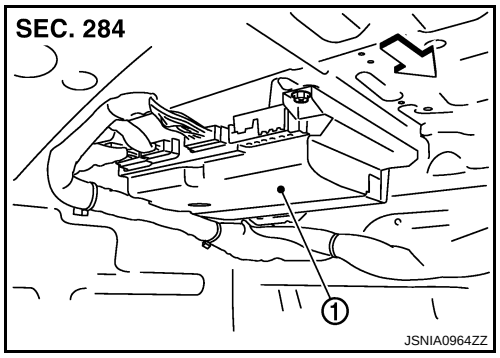
INSTALLATION

Install in the reverse order of removal.

BOSE AMP.

Exploded View

INFOID:0000000004156138



⇦: Vehicle front
1. BOSE amp.

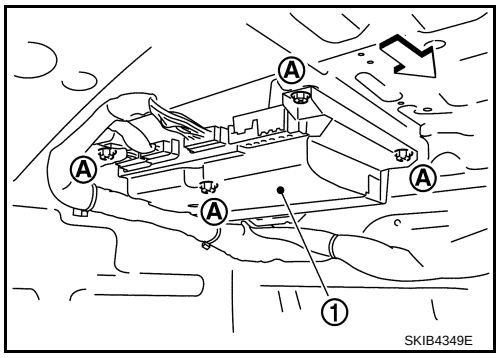
Removal and Installation

INFOID:0000000004156139

REMOVAL

1. Remove trunk front finisher. Refer to EI-66, "Component Parts Location".
2. Remove screws (A), and disconnect connector.
3. Remove BOSE amp. (1).

⇦: Vehicle front



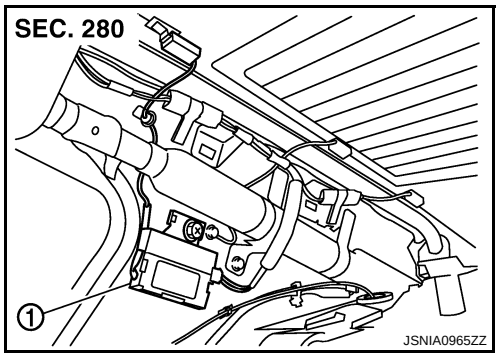
INSTALLATION

Install in the reverse order of removal.

ANTENNA AMP.

Exploded View

INFOID:0000000004156140



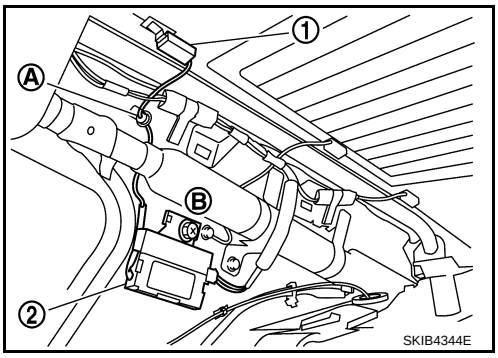
1. Antenna amp.

Removal and Installation

INFOID:0000000004156141

REMOVAL

1. Remove back pillar garnish RH. Refer to EI-49, "Component Parts Location".
2. Disengaged the clip (A) to separate glass terminal (1).
3. Remove screw (B) and remove antenna amp. (2) from vehicle.



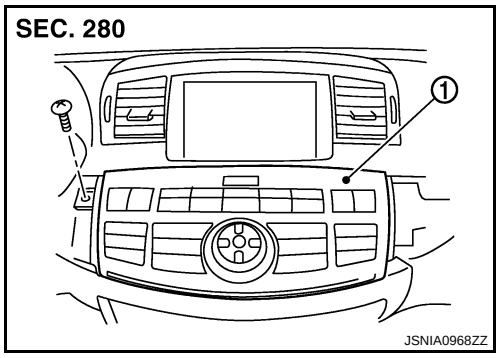
INSTALLATION

Install in the reverse order of removal.

MULTIFUNCTION SWITCH

Exploded View

INFOID:0000000004156142



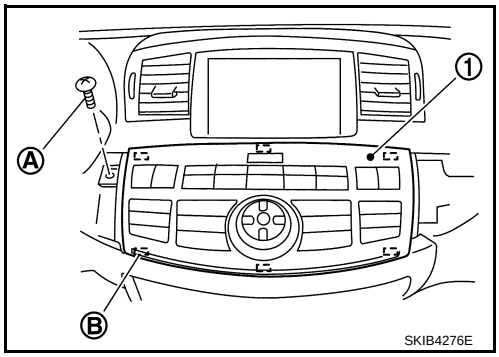
1. Multifunction switch

Removal and Installation

INFOID:0000000004156143

REMOVAL

1. Remove instrument panel finisher B and C. Refer to IP-12, "INSTRUMENT PANEL : Component Parts Location".
2. Remove screw (A).
3. Disengage tabs (B) and connector to separate multifunction switch (1) from instrument panel.



INSTALLATION

Install in the reverse order of removal.

PRESET SWITCH

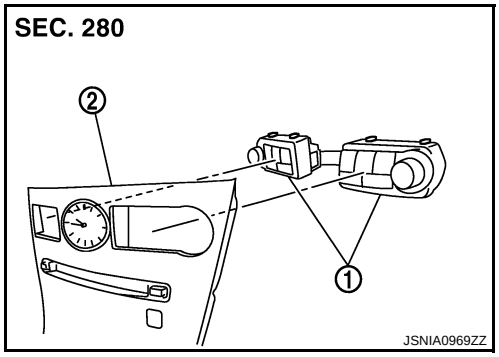
Exploded View

INFOID:0000000004156144

REMOVAL

Refer to IP-19, "CLUSTER LID C : Component Parts Location".

DISASSEMBLY



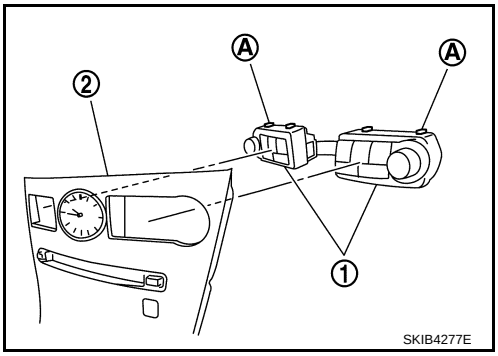
1. Preset switch
2. Cluster lid C

Removal and Installation

INFOID:0000000004156145

REMOVAL

1. Remove cluster lid C. Refer to IP-19, "CLUSTER LID C : Removal and Installation".
2. Disengage tabs (A) to separate preset switch (1) from cluster lid C (2).



INSTALLATION

Install in the reverse order of removal.

NOTE:

When installing preset switch, do not allow the print wire that connects preset switch and multifunction switch to get caught in between AV control unit and preset switch.

STEERING SWITCH

Exploded View

INFOID:0000000004156146

Refer to PS-10, "Removal and Installation".

Removal and Installation

INFOID:0000000004156147

REMOVAL

Refer to PS-10, "Removal and Installation".

INSTALLATION

Install in the reverse order of removal.

REAR CONTROL SWITCH

Exploded View

INFOID:0000000004156148

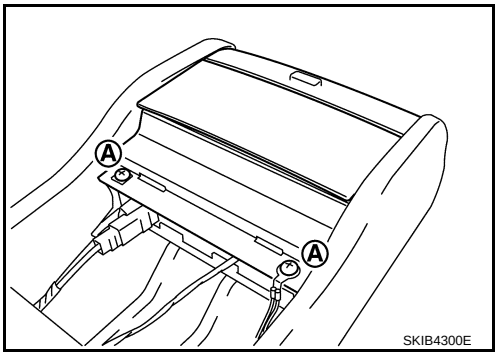
Refer to SE-156, "Disassembly and Assembly".

Removal and Installation

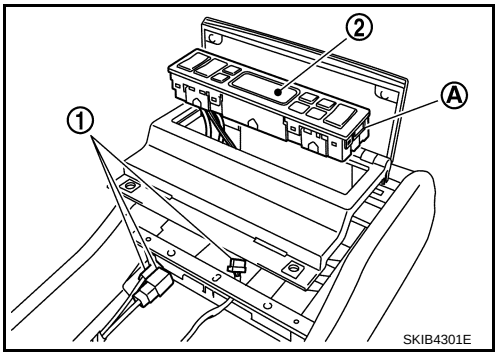
INFOID:0000000004156149

REMOVAL

1. Remove tray box from armrest. Refer to SE-156, "Disassembly and Assembly".
2. Remove screw (A).



3. Disconnect connector (1) and disengage tabs (A) to separate rear control switch (2).



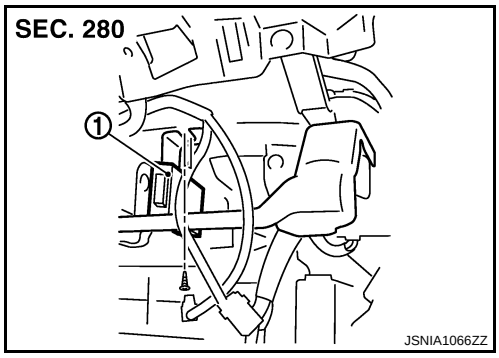
INSTALLATION

Install in the reverse order of removal.

IPOD ADAPTER

Exploded View

INFOID:0000000004156150



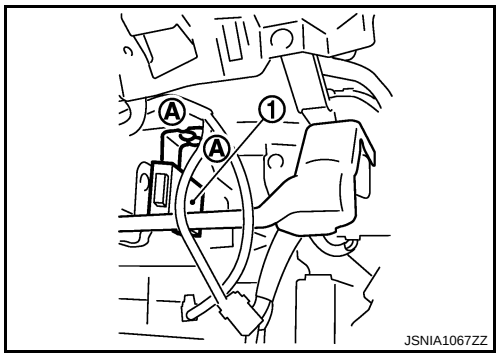
1. iPod adapter

Removal and Installation

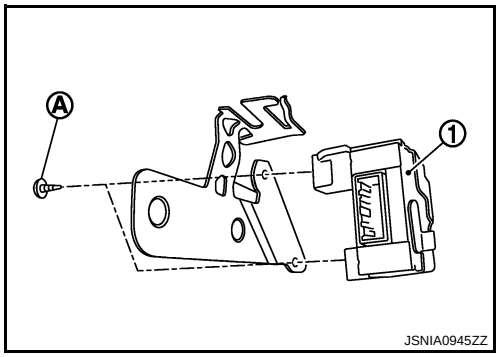
INFOID:0000000004156151

REMOVAL

1. Remove glove box cover. Refer to IP-20, "GLOVE BOX : Removal and Installation".
2. Remove screws (A) and remove iPod adapter bracket and iPod adapter (1).



3. Remove screws (A) and remove iPod adapter (1) from iPod adapter bracket.



INSTALLATION

Install in the reverse order of removal.

IPOD CONNECTOR

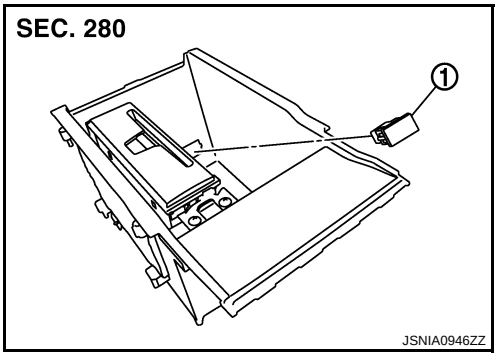
Exploded View

INFOID:0000000004156152

REMOVAL

Refer to IP-22, "CENTER CONSOLE : Component Parts Location".

DISASSEMBLY



1. iPod connector

Removal and Installation

INFOID:0000000004156153

REMOVAL

1. Remove center console. Refer to IP-22, "CENTER CONSOLE : Component Parts Location".
2. Push the pawl from the back of center console to remove iPod connector.

INSTALLATION

Install in the reverse order of removal.

DVD PLAYER

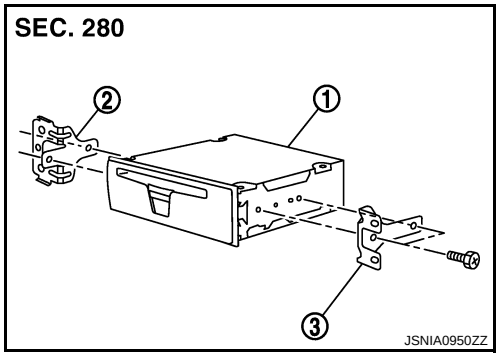
Exploded View

INFOID:0000000004156154

REMOVAL

Refer to IP-22, "CENTER CONSOLE : Component Parts Location".

DISASSEMBLY



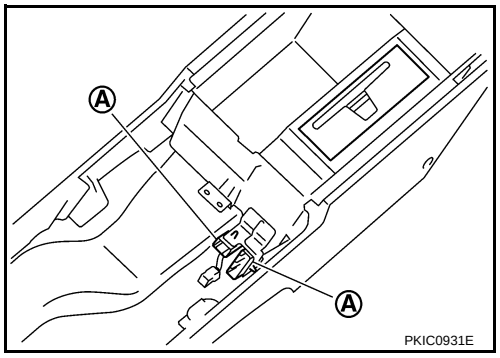
1. DVD player
2. Bracket LH
3. Bracket RH

Removal and Installation

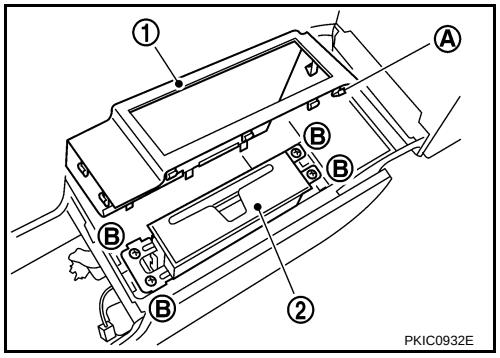
INFOID:0000000004156155

REMOVAL

1. Remove cup holder. Refer to IP-22, "CENTER CONSOLE : Disassembly and Assembly".
2. Disconnect sub harness connector.
3. Remove sub harness connectors (A) from bracket.



4. Remove metal clips (A) and 8 pawls. Then DVD player cover (1).
5. Remove screws (B) and remove DVD player (2).



INSTALLATION

Install in the reverse order of removal.

AUXILIARY INPUT JACKS

Exploded View

INFOID:0000000004156156

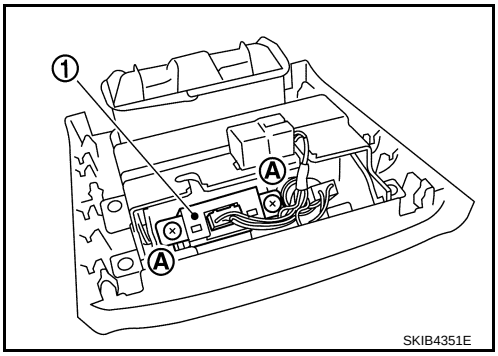
Refer to IP-22, "CENTER CONSOLE : Component Parts Location".

Removal and Installation

INFOID:0000000004156157

REMOVAL

1. Remove center console rear finisher. Refer to IP-22, "CENTER CONSOLE : Component Parts Location".
2. Remove screws (A) and disconnect connector. Remove auxiliary input jacks (1) from center console rear finisher.



INSTALLATION

Install in the reverse order of removal.

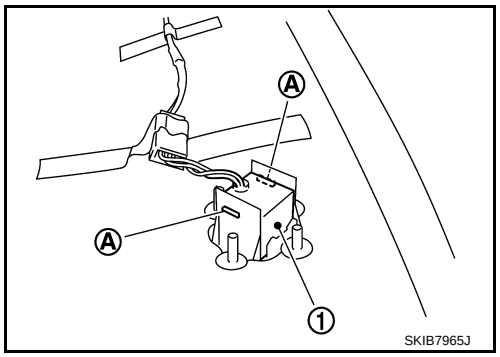
MICROPHONE

Removal and Installation

INFOID:0000000004156158

REMOVAL

1. Remove headlining. Refer to EI-63, "Component Parts Location".
2. Remove connector.
3. Raise tab (A) and remove microphone (1).



INSTALLATION

Install in the reverse order of removal.

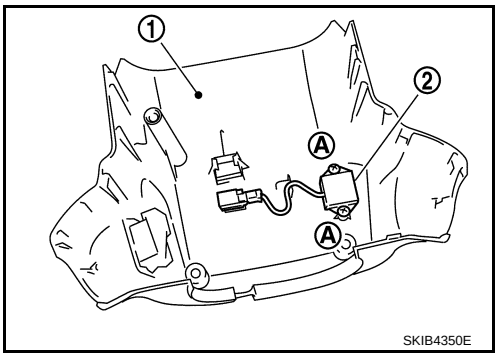
AUDIOPILOT® MICROPHONE

Removal and Installation

INFOID:0000000004156159

REMOVAL

1. Remove steering column lower cover. Refer to IP-12, "INSTRUMENT PANEL : Component Parts Location".
2. Remove screws (A) and disconnect connector.
3. Remove Microphone (2) from steering column lower cover (1).



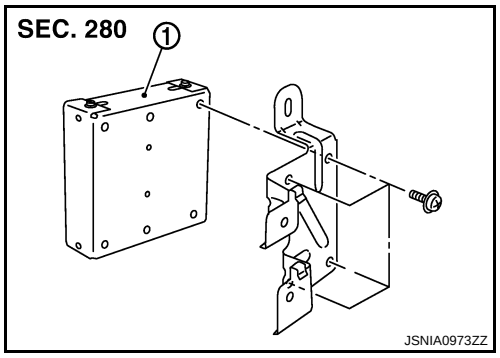
INSTALLATION

Install in the reverse order of removal.

CAMERA CONTROL UNIT

Exploded View

INFOID:0000000004156160



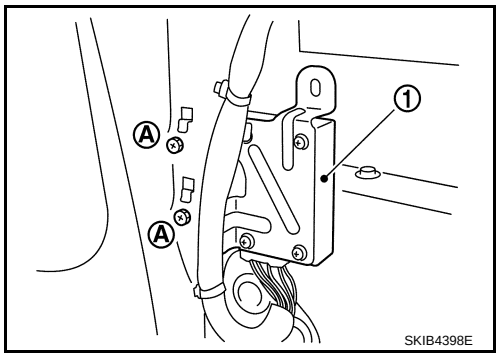
1. Camera control unit

Removal and Installation

INFOID:0000000004156161

REMOVAL

1. Remove trunk side finisher (RH). Refer to EI-66, "Component Parts Location".
2. Remove screws (A) and disconnect connector, and remove camera control unit (1).



INSTALLATION

Install in the reverse order of removal.

Adjustment

INFOID:0000000004156162

ADJUSTMENT

There may be a misalignment of possible route line center position of rear view monitor after removing camera control unit. Therefore, correct neutral position with the following procedure.

1. Steer the steering wheel to the leftmost and rightmost ends.
2. Drive vehicle at 30 km/h (18.6 MPH) min. speed at least 100 m (328.1 ft).

REAR VIEW CAMERA

Exploded View

INFOID:0000000004156163

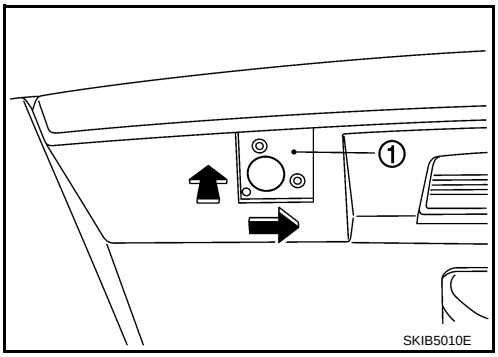
Refer to EI-68, "Component Parts Location".

Removal and Installation

INFOID:0000000004156164

REMOVAL

1. Remove trunk lid finisher inner. Refer to EI-68, "Removal and Installation".
2. Remove screws attaching camera and camera bracket.
3. Remove connector and connector clip.
4. Remove camera bracket (1) while pushing right direction of vehicle.



INSTALLATION

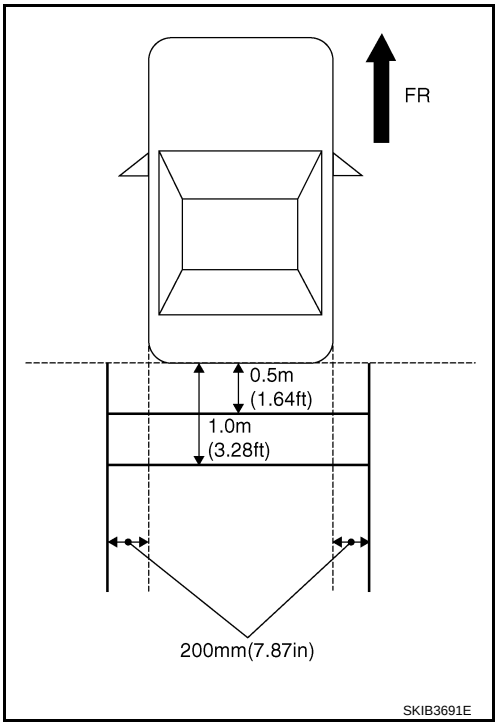
1. Install rear view camera and camera bracket while pressing to trunk room side.
2. Install connector and connector clip.
3. Install trunk lid finisher inner.

Adjustment

INFOID:0000000004156165

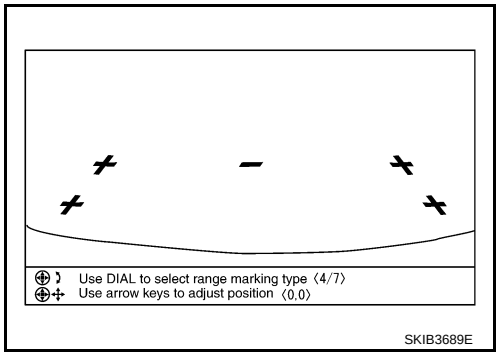
Adjust the guide line position if the guide line position is shifted after installing the rear view camera.

1. Draw lines on rearward area of the vehicle passing through the following points: 200 mm (7.87 in) from both sides of the vehicle, and 0.5 m (1.64 ft), 1.0 m (3.28 ft) from the rear end of the bumper.
2. Set into “Adjust offset of rear view camera” mode of Confirmation / Adjustment mode.



3. Rotate the center dial, and then select the guiding line pattern so that its angle is aligned with the correction line of the rear of the vehicle.

Selected pattern : 7



4. Make fine adjustment to the correction line of the rear of the vehicle with up/down/left/right switches so that its position is aligned with the guiding line. Press “”

Up/Down adjustment range : –20 – 20

Left/Right adjustment range : –20 – 20

CAUTION:

Never operate other function such as pressing BACK while writing index data.

If Confirmation/Adjustment mode does not function in the above procedure, perform one of the following service to adjust the index again.

- **Remove battery for five min. Then reconnect battery.**
- **Remove camera control unit connector for five min. Then reconnect camera control unit connector.**

STEERING ANGLE SENSOR

Exploded View

INFOID:0000000004156166

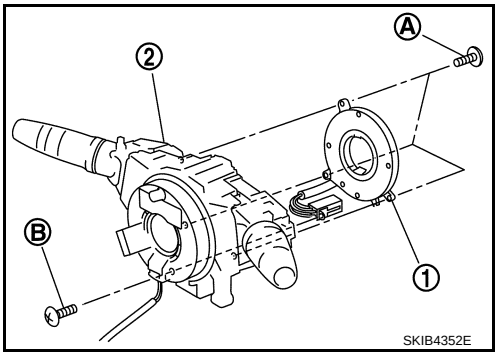
Refer to PS-9, "On-Vehicle Inspection and Service".

Removal and Installation

INFOID:0000000004156167

REMOVAL

1. Remove combination switch. Refer to LT-177, "Removal and Installation".
2. Remove screws (A) and remove connector mount screw (B).
3. Remove steering angle sensor (1) from combination switch (2).



INSTALLATION

Install in the reverse order of removal.

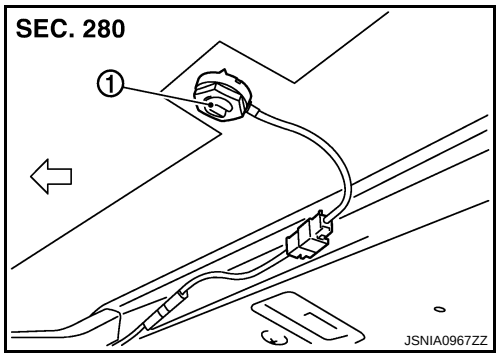
CAUTION:

Insert the projection area, and install steering wheel angle sensor while fitting adjusting the triangle marks (Larger mark should be upward.).

SATELLITE RADIO ANTENNA

Exploded View

INFOID:0000000004156168



⇦: Vehicle front
1. Satellite radio antenna

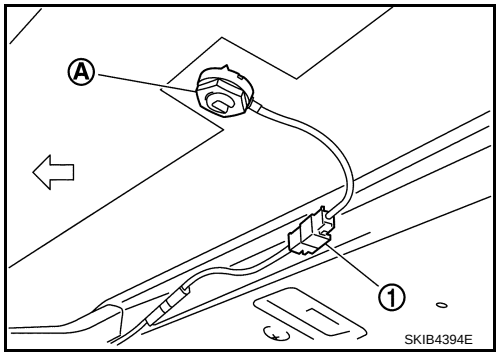
Removal and Installation

INFOID:0000000004156169

REMOVAL

1. Remove headlining assembly (rear) to secure work space between vehicle and headlining. Refer to EI-63, "Removal and Installation" [with normal roof] EI-63, "Removal and Installation" [with sunroof].
2. Remove nuts (A), and then disconnect connector (1).
3. Remove satellite radio antenna from roof panel.

⇦: Vehicle front



INSTALLATION

Install in the reverse order of removal.

Satellite radio antenna mounting nut : **6.5 N·m (0.66 kg-m, 58 in-lb)**

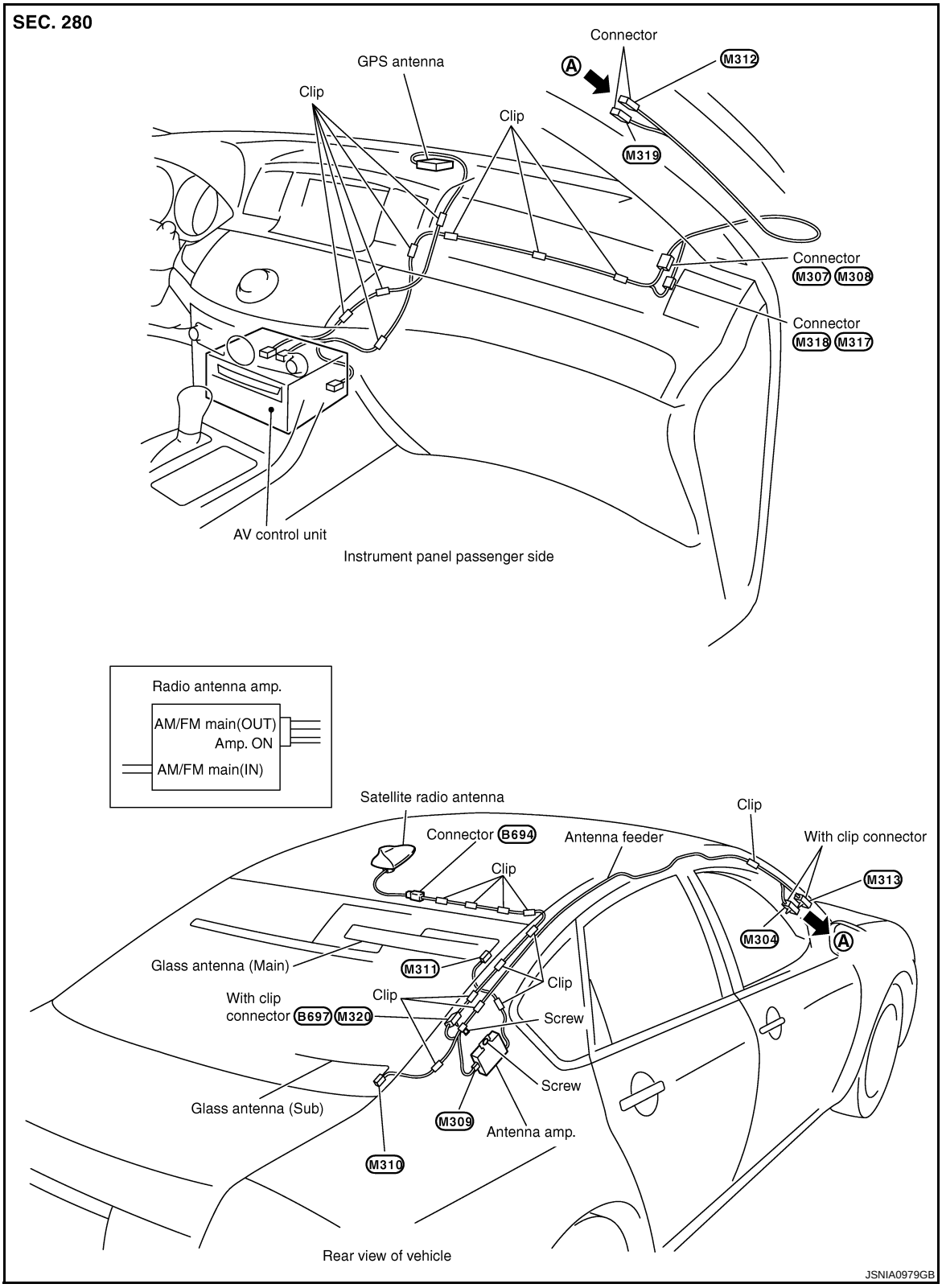
CAUTION:

Be careful about tightening torque. Antenna sensitivity becomes poor, and when it is excessive, roof panel may be deformed, when satellite radio antenna mounting nut tightening torque is loose.

ANTENNA FEEDER (RADIO)

Harness Layout

INFOID:0000000004156170

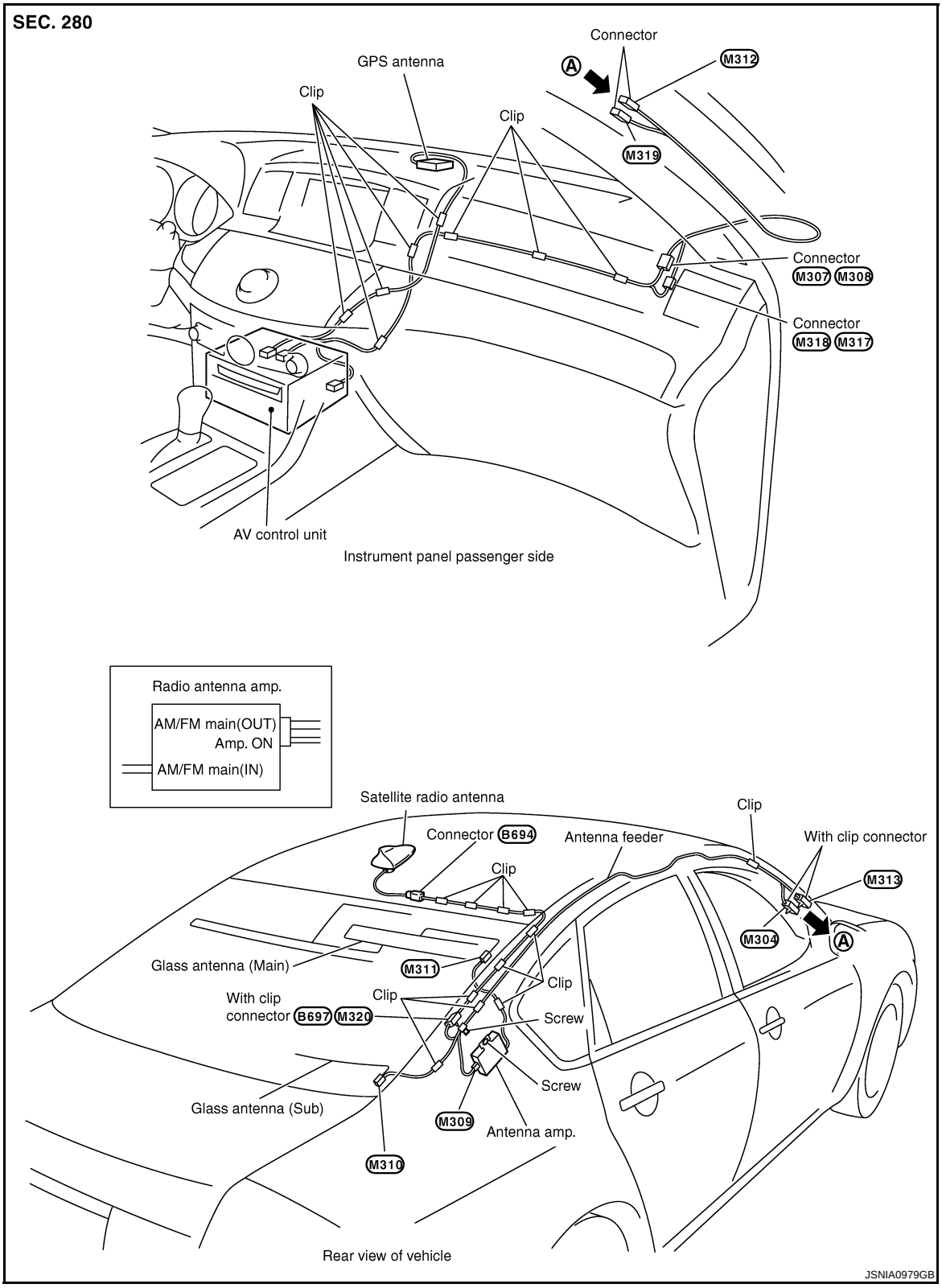


ANTENNA FEEDER (SATELLITE RADIO)

Harness Layout

INFOID:0000000004156171

SEC. 280



ANTENNA FEEDER (GPS)

Harness Layout

INFOID:0000000004156172